



This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

Usage guidelines

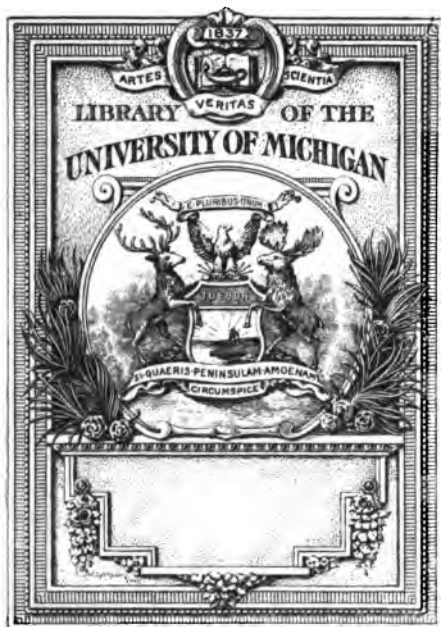
Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

- + *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.
- + *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.
- + *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.
- + *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at <http://books.google.com/>



H616.2
D55

HAY FEVER;

ITS PREVENTION AND CURE.

121872

BY

PERRY DICKIE, M. D.,

AUTHOR OF

"URICACIDÆMIA; ITS CAUSES, EFFECTS AND TREATMENT."

PHILADELPHIA:
BOERICKE & TAFEL.
1903.

COPYRIGHTED
BY
PERRY DICKIE, M. D.
1903.

T. B. & H. B. COCHRAN,
PRINTERS,
LANCASTER, PA.

DEDICATION.

To the vast army of hay fever sufferers this little volume is inscribed. Victims of a complaint making their nights hideous, as well as their days a period of discomfort, on account of the recollections of the past, as well as the anticipation of possible future trials and tribulations which are to be expected from this malady if allowed to pursue its course unchecked.

For the benefit of such as these this book is put forth with the hopes that success will follow its teachings.

PREFACE.

Considering the wide-spread prevalence of hay fever, and the large number of individuals afflicted with it, we cannot but marvel that there has been, comparatively, so little written upon the subject. In fact, it has been severely let alone by the profession who seem to prefer to treat their cases as they come along, in a haphazard sort of way, chiefly with palliatives, and they are largely assisted by luck and wise and beneficent mother nature, who always does her best for the patient's cure. When the matter becomes too troublesome these practitioners avail themselves of their usual prerogative of prescribing a sojourn at some resort frequented by this class of sufferers. In this way a knotty problem is disposed of for the nonce, and at the same time they inwardly congratulate themselves on their escape from an exceedingly unpleasant dilemma, then and there with the fervent hope that of all future patients none would be afflicted with this obstinate and soul-trying complaint.

Our medical journals teem with that which is absolutely useless, except to the small minority, and they could well spare a little room, at least once in a while, for something of a practical nature pertaining to this subject. But as a high-sounding title to an article makes a much more pretentious appearance than so plebeian a subject as hay fever, such lowering of one's dignity is not to be expected of the average human being with aspirations to shine professionally.

As it is a matter of common occurrence with which we all have wrestled so often, and in not a few cases with a lack of success, we are loth to lay bare our failures to the light of day.

It has been suggested as an explanation of this tendency to "high flying" that a paper dealing with a vague or abstruse topic and the lack of a general understanding of the subject, protects one in a large measure from—as it is expressed in common parlance—being "hailed over the coals" for a possible error or discrepancy committed in an article of this kind.

It is true that some sporadic and widely scattered writing upon the subject of hay fever has been indulged in from time to

time, but considering its importance we must admit that the study of this disease has been very much neglected by the medical profession as a body.

Actuated by such a condition of affairs, the writer ventures to enter upon this comparatively untrodden path, hoping that what he may put forth upon this subject will be of some value, and by no means regarded as a futile attempt to enlarge its exceedingly meagre extent in the field of literature.

INTRODUCTION.

Of all the ills of the flesh to which mankind is heir, it would seem that the maximum amount of discomfort, annoyance—nay, even in many cases, actual suffering—can be attributed to what in common parlance is known as “hay fever.” In scientific nomenclature, although designated by innumerable terms, only exceeded by the various remedies recommended for its cure, the most appropriate to the mind of the writer is “periodic coryza.”

This disease consists of a set of symptoms, the manifestation of a deep-seated neurotic condition; in themselves they are in no way dangerous to life, yet they may so lessen the tone of the system and the vital resistance, that under such circumstances serious diseases are enabled to obtain a foothold not possible in the normal state. Besides, the deep-seated systematic condition of which this disease is indicative is always a menace to the patient as an ever present possibility of developing into conditions of permanence, and may even in some cases

result in organic complications ultimately fatal to life.

Until comparatively recent times, hay fever, although suffered by the many and studied by the few, has seemingly been regarded by the majority of the non-suffering laity and the uninterested portion of the medical profession as rather in the light of a joke than an ailment. Those afflicted with it being entitled to but scant sympathy, if any at all, while to the general profession it has seemed a condition not worthy of scientific standing as a disease.

In short, it has been regarded as but a popular complaint to be relegated to the domain of the pills and snuffs of the wise medical dame of whom every family is more or less the happy possessor.

However, as truth and knowledge, once in a while, rise to the top, in the early part of the century some of our medical brethren, themselves victims to this complaint, came to the conclusion that it was not really as funny as it looked, and, therefore, by means of experiments and writings, started it on its way toward a position in the category of true ailments. From this time it has slowly crept along, snail-like we must admit, but

gradually gaining in size, until at the present time it has reached proportions sufficiently large, but not by any means voluminous, for one to obtain enough material to write a book upon. A task the writer hopes to accomplish to the satisfaction of all seekers after knowledge upon this interesting although neglected complaint.

In regard to this subject there is one point to be ever borne in mind, that as all summer colds are not by any means hay fever, many of the vagaries attributed to it are the result of a misconception of what the condition really is.

Its proper sphere in medicine lies in the domain of the reflex nasal neuroses, it being one of its divisions. It possesses such fixed and unvariable characteristics that to mistake any other complaint for it is utterly inconceivable, to say the least.

If the diagnosis of all in medicine were as simple and clear as this disease, the physician's work would be much lighter.

The writer is of the opinion that the failure to differentiate between this complaint and others of which it is a division, is responsible for the comparative obscurity in which it has existed for so long, and also for

the innumerable theories as to its causation. In regard to its cause even now there is a great diversity of opinion in the medical profession, and until its true etiological factors are thoroughly understood its cure is not possible of accomplishment in a scientific manner.

In this book the writer hopes to be able to demonstrate clearly his views as to this disease, especially its etiology and treatment, the latter, of course, being of the most interest to the practicing physician.

DEFINITION.

Hay fever is a condition of the nose simulating in all respects an attack of acute rhinitis or common "cold in the head," but characterized and differentiated from it by its marked periodicity. It occurs on or about a fixed date yearly; either in the spring, summer or autumn, or all; being of limited duration. Its symptoms consist of a swelling and turgescence of the turbinated bodies or erectile tissue of the nose, as also its lining membrane; accompanied by violent sneezing and a profuse irritating watery to mucous discharge from both nose and eyes, with more or less conjunctival irritation and quite frequently asthmatic complications.

This condition usually appears suddenly and disappears in the same manner, and is accompanied by but few constitutional symptoms, if any.

It results from several factors, there being several attributed as predisposing causes of it, three in all; a systemic and local, also an exciting cause, which, by

common consensus of opinion of the medical profession, is attributed to vegetable pollen in contact with the mucous membrane of the nasal passages.

SYNONYMS.

Autumnal Catarrh.
Coryza Vasomotoria.
Coryza Vasomotoria Periodica.
Hay Asthma.
Hay Fever.
Idiosyncratic Coryza.
June Cold.
July Cold.
Peach Cold.
Periodic Hyperæsthetic Rhinitis.
Pollen Catarrh.
Rhinitis Vasomotoria.
Rose Cold.
Summer Catarrh.
Vasomotor Coryza.
Vasomotor Rhinitis.

HAY FEVER.

HISTORY.

The earliest reported case of this complaint dates back to the sixteenth century. From that time occasional references have been made by various writers upon this subject. Little importance seems to have been attached to it, however, as an independent disease until considerably later.

During all this period innumerable theories as to its cause were advanced, still its name, "hay fever," in the face of these conflicting opinions, adhered to it. When this name was first applied to the disease is not known.

We are informed that as late as 1819,

although known to the laity, hay fever was not recognized as a distinct disease by the profession.

From that time on, however, it seems to have received more attention, and sunshine, dust, heat, odors, fatigue, also "effluvia and emanations" from flowers, were claimed by various writers as the cause of this condition; every man vieing with the other in hatching out something novel or different as to the cause of this ailment.

This work, although individually of little value, when taken collectively, later on began to be of some worth, besides acting as an incentive and stimulus to the different investigators to whom we are indebted for so much of the information we now possess in regard to this disease.

The most important of all were the investigations of Blackley, who, by means of an extensive series of scientific experiments, demonstrated the fact

that the pollen of grasses and plants floating in the atmosphere was the sole exciting cause of this trouble.

In 1876, Beard, by means of voluminous statistics, proved that a nervous temperament, as a rule, existed in the majority of the cases and acted as a predisposing cause in this complaint.

In 1877, Marsh called the attention of the profession to the fact that the pollen of the *Ambrosia artemisiæfolia*, or common ragweed, was the most active of the pollens as an agent in this trouble.

In 1882, Daly called attention to the fact that a diseased condition of the nasal cavities was an important factor in the cause of hay fever.

In 1883, Sajous, in an essay upon this subject, laid great stress upon three causative factors in this complaint, viz.: an external irritant, a deranged neurotic state of the system, and a sensitive area of the nose.

This classification of the etiological factors of hay fever has been retained by the majority of the medical profession, and although during the interval between that period and the present time more has been written upon the subject, still nothing new of any value as to the cause of this disease has appeared.

Therefore, to Sajous may be given the credit of placing our knowledge of hay fever upon a scientific basis, at least as to its etiology.

Would that a method of treatment for it as satisfactory could be found, for although within the last few years great improvements over that of the past have been made, still, as yet, we have by no means found the grand panacea for the cure of all cases.

REFLEX NASAL NEUROSES.

Under this term is included a form of systemic disturbance consisting of various marked phenomena depending upon an intranasal irritation, made up of conditions, some of which are situated in the nasal organ, while others involve more distant portions of the body by means of reflex action, being characterized by symptoms pointing to sensory, motor, vasomotor, and secretory derangements.

Divided into two classes :

1. In which the condition of the nose gives rise to symptoms in the nasal organ itself ; as in the various forms of nervous coryza.

2. When the irritation in the nose causes symptoms at other points ; as asthma, cough, etc.

A third class has been suggested, of

remote lesions giving rise to nasal symptoms; but this requires further proof before becoming an authoritative etiological factor in this condition.

The causes to which these reflex morbid phenomena have been attributed are quite numerous and theories innumerable exist concerning them.

In the nose we find of the most importance, hyperæsthetic rhinitis, enlarged turbinals, mucous polypi, septal deviations, spurs, etc.

Of these, the especial etiological factor in producing an irritated condition of the intranasal spaces, being the contact of either the inferior or middle turbinal body with the septum; however, as these conditions are often present without the occurrence of any disturbing symptoms that would indicate their existence, it would seem evident that there must be some additional cause of irritation by which these same symptoms are produced.

The presence of an hyperæsthesia of the terminal filaments of the nasal mucous membrane—the sensory nerves of the nose—resulting from an undue activity of certain nerve centres; an existing neurotic predisposing condition manifesting itself in the part of the body most susceptible to its influences; in this case the nose. Possibly an inherited acquirement, but originally a state of systemic disturbance brought on through the improper elimination and excessive retention in the human economy of the waste products of the function of metabolism. Usually due to a faulty method of life, but at times purely a pathological condition of impaired oxidation in the tissues, whereby, instead of urea as an end product, we have the incomplete result, uric acid. The former freely soluble and easily excreted, while the latter not so, remains in the blood or tissues, acting as an irritant and sets

up various disturbances throughout the whole body. This occurs most frequently between puberty and middle age, rarely in children or in old age, nor is it particularly confined to either sex. Its symptoms consist of a variety of functional disturbances situated both in the nose and in other parts of the body.

Under the first class of which we have:

Nervous or paroxysmal coryza or sneezing—vasomotor rhinitis—consisting of the symptoms, sneezing, watery or serous discharge, nasal obstruction, and an injection of the conjunctival membrane, all of more or less severity; their duration being from a few minutes to several hours or longer. Coming on at no regular time, developing suddenly and subsiding equally so; this, together with the absence of any constitutional symptoms, serves to distinguish this condition from an attack of acute rhinitis.

The objective appearance being usually redness and swelling of the nasal mucous membrane, especially the inferior turbinals; but these, on the contrary, may sometimes be pale and bloodless.

Being essentially a vasomotor derangement or paralysis, the attacks in the majority of cases spring from an irritation of an exceedingly hyperæsthetic nasal mucous membrane, which form being the most frequently met with of this class of affections; besides often preceding or accompanying neuroses affecting more distant parts of the body.

Its exciting causes are numerous and in many cases not apparent.

Appearing at all times and under any circumstances; early in the morning or in the evening; in females at the menstrual period; also dust in or out of doors may be a cause, drugs as powdered Ipecac, Colocynth, or Scammony,

etc. ; exhalations from animals, as dogs, cats, horses, etc. ; various odors and scents. Besides sunlight, changes of temperature, exercise, various impressions upon the sensory nerves of the skin, as well as also psychical causes. As an instance of the latter, we all have in mind the well-known classical episode of the lady who invariably suffering from attacks of this trouble when smelling a rose, having an attack brought on by the presence of an artificial rose.

Pollen of various plants is also a causing factor of this condition, but one of many, simply acting as an irritant, unlike in hay fever where it is the sole disturbing element, and which complaint is but a figure in this group of cases termed "reflex nasal neuroses," differing also in its marked periodicity, and occurring only at the flowering of certain plant life, the action of its pollen bringing on this complaint.

As hitherto, these conditions have been so completely mixed up, the term, hay fever, used for every kind of cold in the head occurring during the summer, it would seem that a differentiation serving to unravel this tangle might be of some use in the domain of medicine.

This, the writer has attempted to do in suggesting that those forms of coryza coming on at all times, irrespective of season, and from all causes that tend to act as an irritant to the nasal mucous membrane be characterized as Paroxysmal Coryza; while to that form occurring only during the period of plant life, and caused only by the action of plant pollen, in short, to what is now known as hay fever, be applied the term Periodic Coryza; by this means establishing a mark of identity for each.

Under the second class we have several reflex symptoms, viz. :

Cough, being the most common and of frequent occurrence; consisting of various forms, as dry, hacking, or barking; apt to be paroxysmal and at times severe. An evidence of its reflex character being in some individuals a possibility of its production by irritating the mucous membrane of the nose with a probe; which sensitiveness especially exists in the inferior turbinals at both their anterior and posterior portions; although this condition may also exist in either the middle turbinal or septum.

It is possible that this cough may be caused by the trickling of mucus from the posterior nares upon the interarytenoid fold of the larynx, thus setting up an irritation independent of any reflex action.

In such a case as this the cough is usually worse when lying down at night in bed, and moderately loose, the mucus seeming to come from a superficial part of the larynx.

Asthma is another very common and annoying symptom of this condition ; the typical form consisting of a vaso-motor paralysis of the bronchial vessels.

There is a very marked connection between asthma and nasal troubles, often occurring with or in alternation with each other, especially noticeable in hay fever patients in which the nasal lesion in time gives place to a settled asthmatic state.

As an evidence of such facts, the relief from asthma often obtained by the removal of polypi and other growths from the nose should be sufficient.

Various other nasal abnormalities are attributed as the cause of this, but, inasmuch as their removal is not always followed by an amelioration or cure of the condition, but even at times by an aggravation too much stress should not be laid upon them as to their importance.

These conditions enumerated are acknowledged by all observers as actual symptoms of this lesion. Various others have been attributed, far too numerous, and of such distant relationship as to seem almost unreasonable in their claims, as, for instance, cardiac disturbances, epilepsy, etc.

The following are some of the less commonly occurring conditions that have been noticed, and although rare, are at least possible, viz.: Spasm of the glottis, parietic condition of the vocal cords, ocular disturbances, redness and swelling of the nose, trigeminal neuralgia, headache, etc.

Diagnosis. Although resembling closely in the main points an attack of acute rhinitis or cold in the head, it differs from it in the transitory periods of nasal obstruction, sneezing and watery discharge from the nose, with the absence of constitutional symptoms, and most capricious conduct

as to its appearance and disappearance, often from no apparent cause whatever.

Also the presence of hyperæsthetic areas in the nasal mucous membrane, discoverable by means of the probe. Again, if the application of Cocaine to the nares relieves these symptoms, it is positive evidence that herein lies the seat of the trouble.

This chapter upon Reflex Nasal Neuroses has been introduced rather as explanatory than essential, although on account of the intimate relationship existing between this condition and hay fever, which is but one of its forms, it would seem best for us to have a clear understanding of the subject in its fullest scope.

ETIOLOGY. GENERAL EXCITING CAUSES.

By the large majority of the medical profession as well as the various authorities upon this subject, two chief factors are recognized as entering into the causation of hay fever, viz.: An external exciting agent, and a predisposing condition which is twofold, consisting of a local lesion acted on by the irritant, as well as some disturbances of the system whereby this susceptibility is promoted.

Of the former, during the history of this complaint, many exciting causes have been advocated, presumably as in the opinions of the observers the aspects of the case seemed to present themselves to them. No doubt each and everyone of which was capable at times of producing symptoms of a

rhinitis, as has been demonstrated since by the experience of many.

Of the agents attributed as effective in the causation of this condition the most important have been : Heat, light, sunshine, dust, ozone, over-excitement ; also various drugs as, Ipecac., *Lycopodium*, Benzoic acid, and other substances ; besides, last but by no means the least, the most important agent which is now considered the sole causative factor in this disease—vegetable pollen.

Heat, although considered the offending property in this disease, does not withstand adverse arguments against it, as an instance of the fact of its non-existence in the hot and arid regions of the globe barren of vegetation, as cases of this kind there are unknown ; besides, at sea in the intense heat of the tropical latitudes in becalmed vessels—even this does not seem to be provocative of these symptoms.

The only possible way in which heat could be causative in this condition is by means of favoring the dissemination of pollen by the wind, as against damp weather when this is not so likely to occur. Therefore it would seem that heat in no other way could be a factor in its production.

Light has always been brought forward as causing this complaint, but without success, although certain cases have been reported, as well as experienced by many of us not victims of this disease, in which attacks of sneezing have been brought on by the action of sunlight upon our eyes. In the land of the "midnight sun" it is claimed to be unknown; but the glare of the sun upon the ocean, the worst form of reflected light, has failed to provoke attacks in persons who suffer from this complaint when on land. Therefore this attributed agent as a maker of trouble likewise falls to the ground.

Dust undoubtedly will exert its irritant properties on all, producing a condition of sneezing and nasal irritation not only in the normal but the abnormal ones as well; therefore we cannot expect a sensitive nasal membrane to withstand and remain proof against its influences, but as a causative factor in hay fever it has by no means been demonstrated to exist. A strong proof of evidence against this claim being that the season of the year in which the presence of dust in the atmosphere is most prevalent in this country,—March and April—is not the hay fever season, its occurrence being in months rather free from this annoyance—June, July and August—hence this agent cannot be seriously considered as a cause of this complaint.

Other causes, agents innumerable, have been suggested as etiological factors in this condition, as various effluvias, odors from animals, many

drugs, etc., too numerous to mention as they cover practically everything included in the animal and vegetable kingdom. Sometimes even psychical causes prevail, as the cases mentioned by the two Mackenzies, of the lady and the artificial rose which brought on an attack, and also the patient looking at a picture of a hay field who thereupon immediately experienced an attack of hay fever.

Pollen is the most generally recognized and widely accepted exciting cause of this disease, and is now considered by the medical profession as a body to be the only one. Inasmuch as the agents already mentioned will produce symptoms of irritation in the nose, but occurring at any period during the year, while pollen catarrh being exclusively periodic, the writer has thought it best to divide them into two classes, viz, hay fever or pollen catarrh, strictly a periodical coryza,

with its characteristic symptoms caused by the presence of pollen in the nares; and that form arising from, and the symptoms caused by, any irritant whatsoever at any time irrespective of season, as a paroxysmal coryza; both however without doubt indebted to a more or less predisposing deep-seated causative factor. As previously noted, Blackley in the years from 1866-1878 proved most conclusively by an elaborate course of experiments that the action of pollen of flowering plants in contact with the nasal mucous membrane was that of a most severe irritant. The symptoms varying in intensity according to the amount of pollen in the air. This demonstration being effected by means of a microscope cover glass covered with glycerine, attached to a hooded contrivance so arranged as to be in a position always exposed to the wind and capable of collecting it, when any pollen contained in the atmosphere would be car-

ried to it and adhere to the glycerine on the cover glass.

By these means he found that the amount of pollen varied largely according to the season, increasing from the beginning (25 grains) to the height, (880 grains) numerically by actual count per day on an average, decreasing again in turn as the season approached its end.

He also found by experiment that 25 grains of pollen per day in the air did not have any effect upon the nasal membranes, but when the amount reached 75 grains per day irritation would be experienced by some susceptible individuals, while 280 grains were sufficient to set up a violent irritation with all the symptoms of an exaggerated form of this disease.

Inasmuch as it is a query why the action of pollen in the air in quantities so apparently minute and much less than other substances, as dust which at

this time does not always affect the nasal membrane. This leads us to seek for some reason other than that of simple mechanical irritation. In short, to assume that some other influence must be essential in causing this irritating effect.

Therefore it has been suggested, and the theory seems most feasible and satisfactory as explaining the query, that the virulency of the pollen in producing this condition is rather due to the presence of a toxin generated by fermentative process, a decomposition of a contained protoplasmic substance in the pollen, which being acted upon by the alkaline secretions of the nares results in this irritating principle. Without some explanation of this sort, the pollen theory as an exciting cause, by purely mechanical irritation, would not by any means be worthy of acceptance.

Of the various plants to which this virulent property may be attributed, we may assume that all possess this quality

to irritate, varying according to the susceptibility of the individual, some being more sensitive to the influence of those by which others are not at all affected. However, as certain ones are more active in their disturbing effects than others, they are therefore by some characterized as the only causative agents in producing this condition.

They may be included in the following list: Beginning with the most active of all in this country, the chief mischief maker of the mid and later summer variety, especially during the month of August, the rag weed or Roman wormwood (*Ambrosia artemisiæfolia*), a most common weed growing profusely in all parts of this country, by roadsides, in the meadows and in waste places; flowering as a rule in ordinary seasons from about the latter part of July, through August, and into September, depending upon the season.

Another plant in the causation of

this condition of almost as much importance, growing in about the same locations, but flowering somewhat earlier, is the golden rod, (*Solidago virga-aurea*), and which in some cases we find to be the sole mischief making agent; although as a rule we can consider it to be but one of the many.

Of the other agents in exciting attacks of hay fever may be mentioned the honeysuckle (*Lonicera caprifolium*), also the lily of the valley (*Convallaria majalis*), besides the common rose, of which especially the June variety is the prime factor in bringing about the trouble in the so-called June or rose colds, the early form of this malady. In addition to these we have the flowering of the various cereals, as Indian corn, barley, wheat, oats, etc.; together with also the wild flowers, as the common daisy (*Bellis perennis*), as well as the buttercup or crowfoot (*Ranunculus bulbosus*), all these have been agents

productive of attacks of this complaint. The various grasses also help along the cause—we are informed they are the principal ones in England—as sweet scented vernal grass (*Anthoxanthum odoratum*), also the sweet scented soft grass (*Holcus odoratus*).

But although these are the principal factors etiological to this complaint, still as I have said before, all vegetable pollen is capable of setting up this condition in a nose in which the membrane is in a hyperæsthetic state and susceptible to the influences of these agents.

Some are affected by a particular one only, others by several of these agents, while occasionally we will find individuals upon whom all vegetable pollen seems to exert its evil influences, and who consequently suffer from this complaint during the whole flowering season, from early blossoming to the first appearance of frost.

The term hay fever is decidedly a

misnomer as applied to this condition, as the emanation from hay—practically but dust—in setting up any trouble in the nose, a cause more applicable to the class paroxysmal coryza, in which it may be one of the exciting factors. But whatever damage resultant from this substance to constitute a cause of hay fever would be at the time of its flowering upon the stalk rather than when cut down and dried in the form of hay.

However, it is probable that the term hay fever will continue to cling to this complaint for a long time to come; nevertheless, it is our duty to at least attempt to remedy the chaotic state of medical nomenclature as existing in the heads of so many of the laity, to correct the most extraordinary ideas they frequently have on these subjects; in many cases savoring more of the tenets of the ancient alchemists than of the civilized age in which we live. It would seem that much of the venera-

tion of the supernatural still clings to some of us, as the average mortal, no doubt if we could so gratify him, would value his prescription far more if it were rendered in a darkened room, the proceedings accompanied by sham thunder and lightning, while, as to ourselves, dancing around a cauldron arrayed in mystic garb. Most decidedly, to many, these accessories would enhance the value of the treatment an hundred fold and stamp us as overflowing with wisdom and erudition in a degree beyond conception.

PREDISPOSING CAUSES. INTRO- DUCTORY.

From the fact that the various agents constituting the exciting causes in hay fever—as well as reflex nasal neuroses—are disseminated widely through the atmosphere, in fact, exist everywhere, and thus expose the whole community at large to their influences, yet only a comparatively few, taken as a whole, suffer from these conditions, we must, therefore, infer that there is an underlying condition or predisposition by which the individual is rendered susceptible, and consequently when exposed to these influences develops an attack of hay fever.

These all consisting of several factors that tend to promote this condition, and of which the following are considered the principle ones :

Race is here an important factor in the causation of this disease, inasmuch as we find that the English speaking people are the chief sufferers from hay fever; even in cases occurring in the other countries, we seldom fail to find that it is the English and Americans who are the ill-favored ones, the natives being rarely affected. While in this country the same rule prevails, foreigners being remarkably exempt, and, also, it seldom, if ever, being found in the negro or American Indian.

Geographical Influences. Without doubt location forms a most important causative factor in this disease. Persons suffering most intensely from its symptoms in one locality, on moving to another frequently become entirely free from even the slightest annoyance.

Statistics demonstrate its greatest frequency in Great Britain and the United States, but rarely in any of the other countries as to affecting the natives.

Its prevalency is greater in the temperate zone, and it is seldom met with in the far north or in the torrid zone. Mountainous countries and the sea coast regions are considered to be exempt from the disease.

In the United States, that region lying between 35-45 parallel of latitude and east of the Mississippi was formerly considered its most prevalent location, the region west of this river having been claimed as free from it. As this idea was promulgated some years ago, when the above limits included practically the centres of civilization and beyond this the "wild west," this rule would hardly apply at the present day.

The reason for its supposed immunity (of the past) in that section of country being undoubtedly due—if really so—to either an absence of vegetation conducive to promoting this condition, sparseness of the population, or last but not most important and likely to be the

reason, to be attributed to the rugged mode of life of the inhabitants of that location and their usual vigorous health as the natural result following such manner of living. However with the trend of progress and civilization westward, this dividing line is a thing of the past, as hay fever is now by no means a stranger to the inhabitants of that section of country, or any less prevalent than with us in the East.

In many locations hitherto noted for their immunity from hay fever and resorted to by these sufferers as a means of obtaining freedom from its annoyances it has been noticed that the relief obtained has not been so marked as in the past, the climate seeming to have lost its beneficial action.

This we must attribute solely to the fact that persons frequenting these resorts in years past did so for the betterment of their health only, and not for social purposes as is now so largely the

case at the present time. Besides at that time their surroundings and mode of life were more or less plain and decidedly hygienic, in every way conducive to health. Plain food being the only obtainable diet, living largely out of doors, and keeping early hours for retiring at night ; when under such conditions relief might surely be expected as a result of such well regulated habits.

Now on the other hand with elaborate hotels, rich diet, late hours ; in fact everything contributing to undermine the constitution not only of an invalid, but even that of a healthy and robust individual, it is to be expected that results not satisfactory are often the rule. If we would but return to the simplicity of the past we would obtain from these climates, without doubt, the same beneficial or curative action as heretofore. Its non-prevalence in the far North and South is undoubtedly due

to the same conditions, viz., in the former a simple mode of life and the inevitable hardships enforced upon the natives, even bare living being a difficult problem to solve at times, while in the south on account of the, if not active habits of life, at least the possession of a climate that permits the remaining out of doors so large a portion of the time, contributes an immense factor in the preservation and retention of an immunity from this complaint.

Heredity has been attributed as also a factor; as evidenced by the occurrence of this disease, as is not infrequently the case, through several generations in the same family. However, it is rather a transmission of the predisposition to this complaint, which, being present and the individuals being exposed to the same exciting causes as his ancestors, naturally the disease makes its appearance.

In cases where we cannot attribute any of the usual causes to the presence of an uric acid condition, it is possible that an inherited faulty metabolism is present and by which this predisposition may be acquired. There is no doubt that as all the various other diatheses are capable of inheritance, this one can also be obtained in the same way, and especially so when due to uric acid retained in the system.

I am of the opinion, however, that even this either inherited, predisposition or faulty metabolism is capable of much relief, being amenable to treatment, so that these manifestations in a large number of cases can be, if not prevented, at least very much mitigated, by means of the proper remedial measures, together with a well regulated mode of living.

Sex, it is claimed, includes about one female to every three males. This being attributed to a greater liability to

exposure on the part of the latter ; but I think this opinion has been based on mere coincidental facts, for as we find, that, as a rule, females are certainly more susceptible to the exciting influences conducive to this disease than males, undoubtedly on account of their usually inactive and confined life, tending to render them so, consequently, as a whole, on looking over this matter, we will find that this point is pretty evenly divided between the sexes, each suffering from disadvantages sufficient to insure a liability to an even possibility of the acquirement of this condition.

Age. This complaint, as a rule, makes its appearance in the individual before the age of forty, although cases are reported as occurring in old people and even children ; but in both the extremes of life this condition is rarely found.

Classes. Hay fever is peculiar, inasmuch as unlike most ailments which

are no respecter of persons, this, on the contrary, seems to be most fastidious and apparently select as to the company it keeps, usually attacking the educated and those of fair social position, and, as a rule, ignoring the poor man or the hard working laborer.

This, however, is to be purely attributed to the fact that the mode and ways of life of the former class of individuals render them susceptible to its attacks, while as to the immunity granted to the latter, we can readily understand the reason why.

Naturally, as would be expected, the individual while in the city has but little experience with this complaint; but, as to the dwellers in the country where we would expect to find it at its worst, owing to their continual exposure to its exciting cause—pollen—yet, as a rule, they are peculiarly free from its effects, as seldom do we hear complaints from them, although occasionally we

do meet with cases of it among the denizens of the rural districts, but here again the working class are seldom so afflicted.

As a rule, with exceeding few exceptions, the only individuals who are among its victims are those following commercial pursuits who are closely confined indoors, the various professions, brain workers and persons of sedentary habits. In short those who are unable or unwilling to obtain their full quota of exercise or fresh air. A reason attributed for its occurrence in the so-called better class being that these individuals owing to a superior intelligence are more likely to apply to the physician for treatment for this complaint; while the poorer, presumably in this case the ignorant (but not necessarily so, as we do sometimes find lack of brains in the wealthy); are not likely to recognize this disease, and therefore will not apply for treatment, hence the comparatively few met with.

From this opinion, however, the writer would differ, as experience in dispensary practice among the poor has demonstrated to him that they are, in a large majority of cases, fully as capable of describing their ailment as many of the more opulent members of society. Therefore we must admit that this theory when looked at squarely in the face is hardly feasible as a reason to explain the apparent immunity of this class of individuals from attacks of hay fever, as we must ever presume the mode of life to be the chief causative factor rather than the mere possession or not of worldly goods.

Neuroses. The claim that this complaint is primarily of neurotic origin is now admitted by the whole medical profession, and with good reason, as invariably the hay fever subject is either wholly or partially of a nervous temperament, and this, too, generally in a well marked degree.

The writer believes that it is in only the above class of individuals that this form of manifestation is produced by the predisposing factor—uric acid—therefore, although a neurotic condition is ever present in these cases it is but a part of the disease and not the cause.

With this complaint we must also include the ever-present neuroses, a lack of vasomotor control or paresis of the blood vessels of the nasal mucous membranes or, if the bronchial vessels are involved, it will be accompanied by asthmatic symptoms also. But whether these conditions are of purely peripheral or cortical origin, it is not as yet possible to demonstrate. Those believing hay fever to be a local disease would prefer the former theory, while those who attribute this condition to a systemic predisposition would undoubtedly favor the latter. But whichever way we may regard this, it is now an accepted fact by many that at least

the primary or underlying cause of hay fever, or in fact any of the reflex nasal neuroses, is a deep-seated lesion of the nerve system due to the retention of uric acid.

Local Disease has been advanced as a cause and is certainly very popular among such members of the profession as possess strong surgical proclivities.

Abnormal conditions, such as mucous polypi, spurs, septal deviation, enlarged turbinals, hypertrophic tissue, hyperæsthetic areas, etc., in fact, everything occurring in the nose out of the ordinary, have been blamed by them for this complaint. Especially so since in some cases of what have been claimed to be hay fever, the symptoms have disappeared after the removal of these abnormalities; therefore, by some, they have been accepted as factors in the causation of this disease.

As an offset to this we may state that it often occurs that a nose not

the seat of any of the above irregularities during an attack of hay fever, has failed to show any disturbance other than that of an intense general congestion ; from which we may assume that these nasal lesions are not by any means essential factors. Inasmuch as the removal of these deformities does not always effect a cure for this condition, it is strong evidence that they are not of any particular importance here, except possibly that at times they set up a state of irritation which in a subject predisposed to this complaint might be effectual in promoting its onset. Regarded separately as a factor in the causation of hay fever, other than this, we are most assuredly not justified in assuming such to be the case.

It is to be expected, of course, that in a nose the seat of deformity we would be likely to find a certain amount of irritation present ; notwithstanding this, ex-

perience has demonstrated that such is not always the case, but there is the possibility of an ever latent irritability ready to burst out under sufficient provocation, thus aggravating the condition.

In such cases we are not warranted in expecting relief from operative measures, at least from the hay fever, although a certain amount of aggravation may be eliminated.

When operative measures are resultant of good, we can assume that the nasal irritation was from these abnormalities only, and as uric acid manifests itself solely in parts of the body made susceptible to extraneous influences by this agent, therefore, these are the locations attacked and hence the trouble is experienced here. Under such existing circumstances the condition is relieved by operation; but the uric acid predisposition is still present and later on attacks the next point of least re-

sistance, thus accounting for the other and subsequent complaints so frequently developing in the patient after having got rid of the hay fever symptoms, the manifestations being such as, rheumatism, heart disease, kidney troubles, asthma, etc., thus clearly demonstrating the fact that the uric acid predisposing cause is still present in the system.

Uric acid. The theory has been advanced and accepted by many that this agent is one of the predisposing causes of hay fever. After a long study of this subject the writer is not only of this opinion, but goes even further and believes that this product is the one primary systemic cause of this condition. To accept it any other way would not seem possible, inasmuch as the action of the uric acid possesses such unique properties, its manifestations are so characteristic and distinctive, that we must yield to it the whole

credit or none at all, as so much can be brought forward to prove it; a reality and not a myth, as claimed by some.

In the writer's recent work on uric acid* he has explained this condition fully, but for the benefit of the reader, that he may better appreciate the subject, he will give a brief synopsis of it here.

Uricacidæmia is a condition, the result of the non-elimination of the waste products formed in the system. Its causative factors being several, viz., an imperfect metabolistic function, either inherited or acquired by disease or through a faulty mode of life, a diet consisting of an excess of nitrogenous food (too much meat eating or tea drinking being the most conducive to this), as also a sedentary inactive life, besides an ever-present condition in high livers. In short, individuals

*Uricacidæmia; Its Causes, Effects and Treatment.
By Perry Dickie, M. D.

belonging to these classes are rarely free from some of the deleterious effects of this agent.

To this class as a rule the hay fever subject belongs, as this condition as we have said before, is very rarely if ever observed in the hard working laborer, although the writer has met with such, but exceedingly seldom.

An active life ever being a sure prevention of the accumulation of uric acid in the system, as the functions of life are, in such individuals, in perfect working order, the waste products are thrown off as soon as formed and not accumulated in the system as in the aforementioned cases.

Haig has advanced some theories upon the subject of uric acid by means of which we are enabled to explain so much that hitherto we could not account for, that a brief resume of his teachings must prove of value to us in our search for the cause of this most

annoying and distressing complaint. General authorities inform us that the output of uric acid is from five to eight grains per day, but according to Haig it is a larger amount than this, viz., in the ratio of one to thirty-three parts of urea excreted, which should average in the individual about three to three and a half grains per pound of body weight. Thus in a man of—say—one hundred and fifty pounds, this would be somewhat over fifteen grains. He also attaches especial importance rather to its proportion to the urea than the amount actually excreted. He tells us that as uric acid is soluble only in alkaline solutions and precipitated therefore when of acid reaction, that its excretion varies according to the alkalinity of the blood, which differs greatly during the twenty-four hours.

In the early morning hours, the reaction of the blood being more alkaline, the excretion of uric acid is at

its maximum. The greatest excess is from about eight o'clock in the morning until noon, gradually diminishing in amount, and from this time the blood being less alkaline, the excretion is consequently at its minimum. During these excess periods, when the quantity passing out is but normal, no bad effects are experienced, but when a superabundance is present in the system from any of the causes above enumerated, this excess quantity in the blood sets up various disturbances, both neurotic and vascular, varying according to the susceptibility of the patient; these troubles occurring in parts of the body in which the least resistance exists to the toxic effects of this agent (uric acid); among its innumerable manifestations being asthma, hay fever, gout, cardiac and renal diseases, liver affections, etc.

As a rule, also bringing about a condition of high blood pressure by means

of its action on the blood vessels—a spasm of the vaso-motor system with a constriction of their walls—resulting in a condition of toxæmia, together with the irritant action of the uric acid in the blood in excessive amount.

This diurnal presence of uric acid in the blood accounts for the periodic exacerbations of the symptoms of many complaints in the early morning hours, at which time asthma is especially worse; when the so-called “acid tide” (more properly lessened alkaline), in which the uric acid is in the tissues and out of the blood, gives place to the entrance of it into this fluid, which owing to its periodicity at this time becomes more alkaline. To this we may properly attribute the frequent attacks of hay fever, their symptoms being at their worst in the morning hours on arising, which time corresponds to the alkaline tide, or the period at which the blood is at its maximum of alkaline reaction.

Besides, as the uric acid patient is also usually a neurotic, as is likewise the hay fever subject, this is another argument in favor of this product as an etiological factor in this complaint.

By means of its toxic action uric acid causes a derangement of the nervous system and a lowering of the general vitality of the body, in consequence of which, whatever point in the individual is the least resistant and in any way susceptible to pathological inroads, we may expect to find occurring manifestations of the uric acid toxæmia. Thus in hay fever, a hyperæsthetic condition being ever present in the nose, in such persons usually one of their weak spots, when the pollen comes in contact with it, disturbances characteristic of this complaint arise.

The action of salicylic acid by its aggravating or causing the symptoms of hay fever, in some cases where administered, also its being known as an ef-

fective and useful eliminant of uric acid, should tend to strengthen the theory that this agent is the root of this disease. Its symptoms so generally coming on at the period when the uric acid excretion is at its maximum is still more convincing as to the correctness of this belief. From this we can assume that the attacks of hay fever are the indirect result of uric acid excretion when present in the blood in excess and cause the necessary predisposing systemic condition for this complaint as well as that of the whole class of reflex nasal neuroses.

Therefore, as an endeavor to disentangle the existing confusion regarding this subject, the writer has suggested the classification, that when we have the characteristic train of symptoms in which pollen only is the exciting cause, occurring at periodic and regular intervals only during the season of plant life, and known as hay fever, to this

condition be applied the term periodic coryza; while on the other hand, when we have these same symptoms coming on at any time of the year, and excited by any cause, as dust, heat, light, etc., but not invariably accompanied by any marked systemic disturbances as usually occurs with a common cold, the term applied to this be paroxysmal coryza.

As uric acid is the product of an imperfect metabolism, a definition of this process might not be out of place here.

Metabolism, divided into constructive (anabolism), destructive (katabolism) and eliminative, is the nutritive process of life by means of which we provide support for the body and replenish the waste ever going on as long as we exist. Besides being the function by which the matter which has served its purpose in the above process is converted into products easily carried off and eliminated from the system.

Metabolism is in fact that portion of the function of nutrition from the assimilation of the food by the lacteals to the deliverance of the waste products to the organs of excretion included.

In the first stage, anabolism (constructive), we have the building up of new tissue from the newly-received food products taken into the body.

The second stage, katabolism (destructive) includes the effete and spent matter converted into the excretory products, water, carbonic acid and urea; from the incomplete conversion of the latter by non-sufficient oxidation, we have resulting uric acid.

The third and last stage, elimination, consists of the proper and effectual removal of these waste products by the blood to the various organs of excretion, the bowels, kidneys and skin.

OCCURRENCE. SYMPTOMS.

The occurrence of an attack of hay fever is possible at any period between the first flowering of plant life and the appearance of frost, which destroys its power to effect evil. The time for the flowering of plants varies in different parts of the world. In England, as a rule, it prevails in June and July, while in India February, and in Australia September, are the months during which its occurrence is most frequent. In this part of the country the season for its appearance is from about the first of May to the last of September; this being with us the average beginning and ending of plant life.

Although its appearance is possible at any time during the flowering season, depending entirely upon the

susceptibility of the individual, still there are two most common periods during this season when the complaint is most prevalent; the first is in early June, when the form met with is known as Rose or June cold, caused by the pollen of the roses blossoming then; this is more often a complaint of early life and regarded favorably as to its curability, although there is always the possibility of this developing into the later form, especially in old cases.

More common, however, is the form occurring in August, beginning, as a rule, about the middle, and known as hay fever proper, principally caused by the flowering of ragweed, but golden rod and various other plants contribute their share towards the causation of this complaint. These two varieties of plants, however, are the most active agents for evil.

Another form of this complaint is met with frequently, occurring around

the latter part of August, known as Autumnal catarrh.

Besides these, varying other forms exist, lasting from but a portion of to throughout the whole season, the different times of attack in individuals being accounted for by the patient's susceptibility to the special forms of plant flowering at that time. When its pollen permeates the atmosphere, a person with a nasal membrane affected by it, will have an attack which will last until its flowering stage is over. Certain individuals susceptible to the actions of several pollens may suffer at various periods during the summer, while some are unfortunate enough to be the possessors of nasal membranes so irritable that all pollens set up this condition; therefore their sufferings last throughout the whole season, from its beginning until the appearance of frost.

As to the occurrence, so frequently

instanced in some cases of these attacks, coming on about the same date yearly, this must be considered as a purely psychic phenomena; a species of mental anticipation not possible of explanation, except that such be attributed to the variety I have termed paroxysmal coryza, a form capable of being excited by any irritant, even a mental influence being sometimes sufficient to set up an attack. But in the true pollen form, periodic coryza, of which variety I do not believe these are, as we are all agreed upon the subject that pollen is its only exciting cause, the paroxysm can only come on when the flowering of the plant to which they are susceptible occurs, varying, as we know, with the season, and although appearing with a certain amount of regularity, still they are ever subject to variations depending upon climatic influences never identically the same from year to year.

As to the duration of the attack, this varies, depending entirely on circumstances, as the susceptibility of the patient, virulence of the pollen, season, etc. Without treatment it will run on from four to six weeks, while in some patients it will last until frost destroys the activity of the pollen, at which period all cases terminate.

The term hay fever is decidedly a misnomer, as the degree of pyrexia present with these attacks is rarely of any great extent and not sufficient to entitle it to be considered a fever.

As there are two forms of the disease there will consequently be two sets of symptoms, according to which type predominates.

The catarrhal form, in which the nose is primarily affected, and the asthmatic, in which the bronchial mucous membrane is the seat of the trouble.

The most characteristic feature of this complaint is its periodicity, the at-

tacks each year occurring at very nearly the same date, undoubtedly affected and induced by the flowering of the plant pollen, varying, however, somewhat each season, according to the climatic influences as well as to locality. By some this has been attributed to psychic influences or else to a process somewhat analagous to the various recurring phenomena of life; the regular beats of the heart, respiratory movements, etc., and in the pathological processes, for instance, intermittent fever. As the writer has before suggested, to avoid confusion in this matter, it is best to relegate conditions of coryza capable of psychic origin to the regular class of reflex nasal neuroses, and keep hay fever as an uncomplicated disease, at least as to its etiology. As an intermittent state is characteristic of the various nervous disorders, we should expect to find in this a condition of essentially neurotic origin.

As to premonitory symptoms at the onset of the attack, these frequently occur in patients of some years' standing, although not always even here; the novices however generally are free from and not troubled with them until later on. They usually consist of a sense of malaise and a general feeling of being out of sorts, while in the large majority there is experienced a palpebral pruritus a few days before the nasal symptoms come on.

The attack proper consists of an excessive irritation of the nose, with a sense of fullness and stoppage, paroxysms of sneezing more or less violent and frequently of prolonged duration, cases having been reported of fits of sneezing as often as twenty times in rapid succession.

Later this is followed by a profuse thin serous discharge from the nose, which may become mucopurulent, and which in some cases is so excessive as

to constitute a veritable rhinorrhœa. The turbinals and nasal mucous membrane become so swollen and engorged as to render normal respiration impossible.

In the eyes we also have a considerable amount of lachrymation, swelling of the eyelids (chemosis) and also photophobia in a varying degree, with a pricking and stinging in the conjunctiva, these inflammatory conditions becoming at times intensely painful and frequently involving the mouth and pharynx. As this disturbs the rest at night we have a resultant insomnia as an additional feature of suffering and from this loss of rest there may be a rise in temperature and pulse but not otherwise. Besides, naturally, as in all conditions of this sort, there will be an impairment of taste and smell.

The above symptoms may vary in intensity from a very mild form caus-

ing little or no inconvenience to that of actual suffering, fairly making the patients life miserable while the attack lasts.

Cough is also an accompanying symptom, but is not constant and frequently occurs during the intervals between the attacks, coming on usually about the second week. When present during the attacks it is spasmodic and often so incessant as to prevent sleep at night, also causing soreness and actual pain from straining the diaphragm and intercostal muscles. This symptom may be most persistent and the longest lasting, remaining after all the others have disappeared.

In patients new to this disease the attacks usually cease with marked abruptness, and in such they leave no traces of local or systemic disturbances. This immunity however is not granted to many who have had these attacks for several years, as at least a state

of irritability and nervousness of long continuance is a likely sequelæ; while in the aged cardiac weakness and hypertrophy may be the result, besides at times developing into a condition of chronic asthma, as well as sometimes taking the form of chronic rheumatism of a very tenacious character.

These hay fever patients very frequently develop into subjects of general reflex nasal neuroses whose symptoms, originally only confined to certain periods, become possible of occurrence from all irritants without regard to the presence of pollen, and not limited to any particular season.

As to the prevailing opinion that this complaint disappears as age advances, the claim being made that susceptibility ceases at fifty years of age, it is without foundation, as these patients as long as they are exposed to the irritating influences, unless cured, are liable to attacks. Cases of the above have hap-

pened but they are by no means the rule. Besides attacks at different seasons will vary in severity, this probably being due to many extraneous conditions, possibly on account of the patient being in a better state of health, the system is less susceptible to the influence of the pollen.

Asthma. In novices this is not always present as a symptom, but as time progresses and the years of the hay fever patient increase this is most always an accompaniment of the attacks. It at first appears as a late symptom coming on after the acuteness has subsided—usually about the fourth week—and is more common to that form of the disease occurring late in the season than in the early part. It comes on nightly and lasts throughout the attack. While in some cases, during the intervals, bronchial symptoms predominate.

Asthma is very apt to be an ultimate

result of hay fever, and in many cases its attacks develop into this form entirely.

The diagnostic features of this disease which are characteristic and distinguish it from all others for which it might be mistaken, are its marked periodicity and its occurrence during the flowering season; the history of previous attacks of a like nature, and, if long lasting, its cessation upon the first appearance of frost; its suddenness of onset, abrupt departure and rarity of dry stage.

These are its chief characteristics, in the absence of which it loses its identity, as under other circumstances, as when accompanied by constitutional symptoms, it becomes but an attack of ordinary rhinitis.

PATHOLOGY.

It is the consensus of opinion of the majority of medical authorities that hay fever is a member of the group of pathological conditions characterized by the term reflex nasal neuroses.

From various corroborative points of evidence the writer assumes that this class of diseases is a manifestation of the toxic action of uric acid in the blood, selecting this site as possessing weaker resisting powers in these individuals; therefore, here is its point of attack.

It is possible that a susceptibility in the nose may be acquired through the presence of such abnormalities as mucous polypi, enlarged turbinals, hypertrophic tissue, sensitive areas, etc., some even attributing this trouble to spurs and deviations of the septum;

but while the former may be the cause or a general state of irritability in the nares, I do not think the latter can be justly claimed as etiological factors in causing this trouble, unless on account of size in either forming a point of contact with the tissues of the opposite side, or else as acting as an obstruction to free respiration. Undoubtedly there is always a hyperæsthetic condition of the nasal membrane in these neurotic cases, even where these abnormalities are absent; but when occurring the possibility of an irritable state is of course so much more likely to be present, this being one of the essential elements in hay fever and ever present; in fact, so to speak, steering the irritant action of the uric acid to the nose; without the presence of this local abnormality this possibly would be a complaint occurring in some other portion of the body more susceptible to the influence of this agent.

Its action primarily affects the nerve centers, and causes the neurotic predisposition so essential to the existence of this state. The hyperæsthetic condition of the nares forms the next factor in the disease; these two comprise the predisposing elements in hay fever and thus provide the means whereby the pollen can act with success in its errand of mischief.

During the attacks we have present a congestion of the mucous membrane of the nasal cavities, with an excessive distention and engorgement of the blood-vessels of the erectile tissue of the nose, especially that covering the inferior turbinated bones, the lower edges of the middle turbinates, as also the lower and posterior portion of the septum.

The irritant in hay fever—pollen—or in the other forms of reflex nasal neuroses—dust, light, heat, etc.—cause by their presence a paralysis of the

vasomotor nerves, with complete relaxation of the blood-vessels of the turbinated bodies and erectile tissue, with their consequent engorgement. As a result of this an exudation of serum occurs and continues as long as the pollen is present as an irritant, poured out as a watery discharge, in some cases in enormous amounts, later on becoming more or less mucoid in consistency.

When the irritant is removed or further access is prevented, the tissues resume their normal calibre and the attack subsides for the time, not to return as long as immunity can be granted from the presence of the exciting cause—pollen.

It has been claimed by Mackenzie and also by Sajous, that there exist in the nose, what are termed by them, sensitive areas, situated at the anterior and posterior extremities of the inferior turbinate bodies, and in the parts of the septum lying immediately opposite.

Holmes attributes symptoms of cough and asthma to an irritation of the posterior end of the inferior turbinate and that portion of the septum lying opposite, while sneezing, lachrymation and other catarrhal symptoms are the result, he claims, of this condition existing in the anterior portions of these bodies.

A hyperæsthesia in these locations might serve to explain the various symptoms in hay fever; the stimulation of these sensitive areas through the pathological process or extra irritation resulting in a reflex act or phenomena. This tendency invariably exists in a varying degree according to the excitability of the erectile tissue.

This complaint is distinguished from coryza, in which, on inspection, an inflammatory light red color of the parts is present, by the swollen membrane, bluish-gray, and covered with a thin, viscid serum giving it, a glassy appearance.

As to the eye symptoms, they are usually more severe in hay fever, the lachrymation and irritation being sometimes most excessive and exceedingly irritating.

TREATMENT.

PRELIMINARY REMARKS.

On account of a seeming lack of interest in this condition by the general medical profession, thereby preventing its desired scientific position in the domain of medicine, truly no complaint in the category of ailments has been the subject of more experimenting than hay fever, not only on the part of the laity, but of the physician as well.

Remedies without end have been devised and tried for its cure, innumerable specifics have been discovered and launched broadcast upon a credulous and suffering public, but, with few exceptions, all to fall flat to the ground as worthless. In fact, up to within the last few years, the only real "cure," to make an Irish bull, was not a cure at all, but only a palliative—climate; the

object being to send a patient to a location where the cause, pollen, was not present, thereby granting temporary immunity.

But with the passing of time, this condition being better understood, some advancement has been made in the therapeutics of this disease, not as much as we would hope for, but enough to convince us that hay fever is curable in the large majority of cases, and in the remainder at least amenable to considerable relief, by the careful physician who looks after the patient's hygiene, habits, diet, etc., points quite as important as drugs, but which, as a rule, are sadly neglected; the latter being the only mode of treatment by a large number of the profession for this condition, whose efforts, under these circumstances are not at all times crowned with the hoped for amount of success.

In addition to this it is necessary

to have a patient perfectly willing to follow out implicitly the directions of the physician, as well as to submit to a preliminary systemic and thorough course of treatment for the prevention of the recurrence of this complaint. To such we can promise much, in a large majority of cases even a cure. By this term I mean the complete cessation of the annoying symptoms without a reappearance, even though the patient be again subjected to the conditions that hitherto have caused all the trouble.

As a rule we will find that the hay fever patient, even though consulting the physician of his own accord, wants to be cured in his own way, as is the case invariably with neurasthenics. True, he is seeking for health, but is not willing to put up with any inconvenience to acquire it. Usually having been the rounds among the medical profession and obtained a different

opinion or theory from each one, he is more or less posted, or at least thinks he is—and Heaven defend us from such as these when they do come—therefore is exceedingly tenacious about having his way and must be managed carefully and systematically, for should we differ too much from him in his opinions, we will be less able to prevail upon him to follow our methods.

To do anything with individuals of this sort we must manage them somewhat in the way a pig is driven to market, *i. e.*, by pulling it the wrong way.

It is a curious fact that the average man or woman seems to think that a knowledge of medicine can be acquired by simply picking it up or by a sort of catching process, like measles, or inherited like the gout. The writer has frequently been informed by aged self-admiring females (the male sex do not seem to possess this faculty for acquir-

ing wisdom) that their erudition in the the science of medicine was due to their having had some relative, no matter how distant, who was a physician.

In our questioning of the patient we should ascertain from him the plant life especially flowering in his vicinity if a resident out of the town; or, if living in the city, if flowers are kept in the house and what kind.

By this means we may be able to obtain a guide to our remedial measures to treat him in the intervals between attacks, thereby producing a sort of immunization to the causative influences and possibly effect a cure by making them nonsusceptible to the action of these agents.

TREATMENT.

HYGIENE.

Assuming, as the writer does, that hay fever is primarily of uric acid origin, hygienic measures must play a most important part in its prevention and cure, if taken in hand a sufficient time before the expected attacks. In the case of individuals living a healthy life, free from uricacidæmic generating factors, I do not believe it possible for the disease to exist.

The hygienic points, which we should endeavor to impress upon our patient to observe, consist of the following: Exercise, bathing, air, clothing and diet. Climate is also a factor.

Exercise. As to this most hygienic measure we are all aware of its importance for the purpose of keeping the processes of life in perfect accord,

stimulating the circulation, oxygenating the blood and quickening all the processes of the body. Even those individuals addicted to the most lazy habits will at least admit that they should exercise more, however numerous the excuses they may make for not doing so.

This we must overcome; persuade them to gradually lead a more active life, and they will eventually learn its necessity by the well being it imparts.

Bearing in mind that these cases being neurotic and well charged with uric acid the increased activity will tend to throw more of this substance into the blood and cause a sense of fatigue; for which reason in the beginning it must be very gradual and just sufficient to quicken the circulation and promote the excretion of the retained waste products, but not enough to cause the formation of an increased quantity as a result of the exertion.

As to exercise, I know of nothing

that is so generally recommended by the laity at random, or prescribed by the medical profession with less discrimination. Yet in a neurasthenic, full of uric acid, I know of nothing that can aggravate these patients' condition more than this in excess.

Exercise, we must admit, in an individual with no uric acid in his system, is a most—if not *the* most—potent and effectual means of preventing an accumulation of this product but when we have allowed it to collect within us until our systems are completely saturated with it we must adopt other measures for its elimination than exercise, except it be commenced very sparingly and slowly and is gradually increased.

Bathing is an important factor to promote excretion of the waste products by maintaining a permeability of the cutaneous ducts. In neurotics this is best accomplished by means of warm

baths, taken at night, to be followed by brisk rubbing with a crash towel until the surface is in a glow, the patient immediately afterward retiring to bed. This is to be especially recommended during the attacks of hay fever as an effectual remedial measure. During the intervals, however, the morning sponge bath is to be advised, followed by brisk rubbing.

The temperature of the water used in this sponge bath should never be warm on account of the liability of taking cold, but should be cool to cold if the patient does not feel chilly and depressed after its use. If it produces this condition we should prohibit, it for the time at least.

As to the cold plunge bath, this is but a heroic measure at any time, and that one survives its severe strain upon the system, taxing the heart, kidneys, brain, etc., driving the blood from the surface to the interior, is but a question

of endurance on the part of the individual. Many of the sudden deaths from diseases of the above organs occurring in what have been considered the robust and strong, we may attribute as the result of these baths.

In the neurotic and neurasthenic it should at all times be most positively prohibited by the physician as injurious rather than beneficial.

Air. Fresh air should always be accessible to the patient; even when not exercising he should remain out of doors in a hammock or chair, of course sheltered from the full effects of the wind.

Camping out in a dry, healthy location is a most potent means of combating the ever present anæmic condition in these patients, thereby supplying the blood with its full quota of oxygen without entailing any extra labor upon them.

In cold weather these subjects suffer

much from its effects and actually feel worse from exercising out of doors, not a myth as some might think, but due to an excess of uric acid in the blood. Have the patient remain indoors until after noon time, say around two o'clock, after the maximum daily excretion of uric acid has taken place, and the so-called acid tide has begun. Following out such a method may often be the means of preventing what would otherwise be to them a source of great discomfort, and what should in reality be an enjoyable and hygienic measure.

Clothing. Custom and experience have fully demonstrated the fact that wool worn next to the skin, of all fabrics, is the most hygienic on account of its absorbative properties, and although possessing a certain amount of porosity it allows the free transpiration of the emanations from the body; still it does not possess this same property re-

garding the animal warmth, of which it is not a conductor, except in a very small degree; which being retained and no heat lost, it is by far the most desirable material for under-clothing at all times.

The various attempts on the part of either visionary, scheming, or even well meaning individuals to introduce their original ideas on this subject are oftentimes liable to be disastrous to their followers, who although possibly not suffering at the time from the results of their somewhat lamblike credulity, later on may pay the penalty for their indiscretions.

Other substitutes for wool, as cotton, linen, etc., have been and are now being continually suggested to those seeking a change; by some from the best of motives for the benefit of their kind, while by others purely from motives of inovation or even purposes of gain. They claim for these, all the

virtues, from simple excellence to the miraculous.

Although these fabrics may be capable of retaining the bodily warmth in full blooded individuals who never feel the cold, for the invalid, weak, anæmic and shivering from every draft of air blowing on him, they would not do at all.

No doubt in tropical countries where a minimum amount of clothing is the object sought for, these fabrics would be most desirable. But in our changeable climate, with our seasons distorted at times even beyond recognition, undoubtedly he who is seeking for hygiene, comfort and safety, will wear high necked and long sleeved woolen underclothing next to the skin all the year around.

Varying of course the thickness as well as the outer garments according to the season and the temperature.

I am fully aware that this suggestion

to the average member of the gentler sex will not meet with a ready acquiescence or approval to say the very least.

In the selection of underwear care must be exercised to procure a loose meshed woolen fabric to permit a full ventilation, and also a free transpiration of the bodily exhalations. Also in the washing it must not be allowed to become thickened, shrunken and matted as is so often the case with flannels.

The assertion made that the drying properties of wool when moistened with perspiration are not as great as of some other materials, may be true. But in hay fever subjects the perspiratory functions are, as a rule, most deficient; in fact a good sweater is not likely to be a lithæmic; therefore, I do not think that this feature need here be taken into account.

Should, however, they be fortunate enough to have an occasional good

sweat, their best course of procedure is to change their flannel, or in fact any clothing of whatever texture they may have on and not let it dry on them.

However, I think that we must all admit that the value of wool as an article of clothing will outstand all other fabrics offered as substitutes, which, up to the present time, at least, are practically untried and their properties purely theoretical.

Diet. As the materials from which a house is constructed constitute its composition and stability so likewise from the food we eat does the fabric of our bodies consist. Therefore, if we desire to retain our health or re-acquire it if lost, it is essential that our diet be of a kind to supply us with the means of forming the sort of tissue necessary for this end. Consequently a diet is required in which the larger proportion of the food serves the purpose of nutrition with the least labor to

the body and the minimum amount of waste.

In short, diet which forms in the system after products which are liable to derange its workings, should by any means the excretory functions not be in their normal condition, should not even be used in health. In the case of an individual with a system below par, these are to be doubly avoided as positively injurious.

I do not think a well-nourished man or woman, whose metastatic functions are in perfect working order and whose excretory products are being eliminated as soon as formed, would ever be troubled with a neurotic complaint such as hay fever, neurasthenia or the like; but in an improperly nourished subject, either from under-feeding or from eating the wrong kind of food, the underlying predisposition essential to the existence of this disease may be generated, and the patient when sub-

jected to the exciting causes will develop a case of hay fever.

I have said before, and it is a noted fact, that hay fever is confined almost exclusively to the English race, the people of England and the United States; it also being a peculiar coincidence that these same people have the reputation of being the greatest meat eaters, besides partaking of tea most extensively as a beverage. Now, inasmuch as these two articles of diet are the factors in causing an excess accumulation of uric acid in the system, as well as the uric acid diathesis, are we not warranted from these facts in assuming that uric acid is the root or predisposing cause of hay fever? Surely sound theories have been built upon far scantier foundations than this.

It has been suggested that there is no knowledge of the existence of hay fever in China or Japan, from whence tea is so largely obtained and where it

is so much used as a beverage; but this by no means invalidates the above theory, as the assumption of the uric acid toxæmia seizing upon the most susceptible part of the human economy; therefore, these people may not possess a susceptibility favoring this complaint, but are rather affected in some other part of the body although from the same influences.

But in such a case comparisons are hardly fair, inasmuch as we are informed by travelers who have been to these countries, that an entirely different grade of tea is drunk at home by their people from the kind they send to us, characterized by them "the foreign devils." Besides their method of preparation for drinking is different from ours, they making simply a light infusion, while a large majority of us require an exceedingly strong decoction, which must also tend to produce different results.

However, as a generator of uric acid in the body, it stands at the head of all the articles included in our diet; therefore, its action upon the nervous system cannot but be more pernicious and it is capable of doing no good.

On these grounds in a neurotic, especially a hay fever subject, tea should under no circumstances be permitted. Coffee and chocolate at no time near the expected attacks, and then both always very weak, but they had better be entirely dispensed with.

Meat should be very sparingly indulged in; not eaten over once a day, and not at breakfast, which should be a diet as light as the calling of the individual will permit. In many cases a light meal of sweet fruit only, as grapes, apples, peaches, bananas, etc., is far preferable.

These cases should drink plenty of water between meals, although not much at meals, besides on rising in the

morning and on retiring at night, in all not less than six to eight pints during the twenty-four hours.

Vegetables should form an important element in the diet of the patient. Peas, beans, cauliflower, spinach, and Brussels sprouts are the most nutritious. They are valuable because of their possession of albuminates and particularly so for their mineral constituents.

To supply the deficiency in albuminates for the lessened amount of meat eaten, eggs can be used when they agree, but milk is especially desirable in all cases, as well as oatmeal, which is a valuable tissue builder, and wheaten, a most nutritive agent; these are all of worth as substitutes for meat.

Cheese is a nourishing article of diet, and contains even a larger percentage of albuminates than meat, but is not tolerated by all stomachs, probably due to its frequent adulteration; but when

it can be eaten by the patient without resultant digestive disturbances it is to be advised as an article of diet. The so-called "cottage cheese," on account of its purity, may be an efficient substitute for it when ordinary cheese is not well borne by the individual

The writer invariably advises a modified diet, such as the above, if the patient be willing to conform to it, as a means of eradicating the predisposing neurotic factor of uric acid origin. This we can attribute as the root of the evil, without which the pollen of plant life coming in contact with the nasal mucous membranes would have no effect whatever.

A patient put upon this regime for a sufficient period, say a month or six weeks, before the expected attack, would no doubt derive much benefit therefrom, although complete immunity from the attack could not always be promised, as the elimination of the ac-

cumulated waste products in the system is not a matter of weeks, but rather of months, and sometimes in old cases even years.

But in all cases we should advise our patients to follow this necessary adjunct to treatment, as without it the accomplishment of any lasting results is absolutely impossible.

Climate. This by many has been the sole means relied upon for the relief of this disease. No doubt when a suitable location is found which grants immunity from the attacks of hay fever it is efficacious as long as the patient remains there, but when he leaves it and returns to his former abode, and is again exposed to the same exciting causes, the liability to the disease being still present, the patient again becomes a victim to those influences.

In short, climate is but a palliative for hay fever and not a cure. We sometimes hear of individuals who after

having spent several seasons at one of these resorts, especially the high altitudes, have seemingly been cured of the disease so that even exposure to locations where heretofore it was not possible for them to remain, brought no return of the symptoms. But in cases of this kind we must rather attribute this to the results of the beneficial action of the pure air and hygienic surroundings which strengthen the system and thereby eradicate from it the neurotic predisposition. A condition for which climate is a most potent remedial factor at all times and which we would rather consider to be the case than to attribute it to the curative action of the location. This is an ever possible result in all cases of this trouble where the patient is willing to carry out the hygienic measures that they undoubtedly conformed to and which was the cause of the cure, although attributed by them to the action of the climate.

•

The proper location for the hay fever subject to obtain relief, or freedom from his trouble, certainly cannot be the garden spots of the earth. To escape these annoyances he must rather choose one with sparse vegetation; a mountainous region, if his heart be not affected by the high altitude, or if this be the case a seashore must be selected. Preferably an ocean island is the place for his sojourn during the prevalence of the pollen. Instead of this latter a seashore location on the mainland could be selected, with cliffs which separate it from the inland country and where the prevailing winds are from the ocean, which would tend to lessen the possibility of access of any vegetable emanations to this locality. The sole aim being to escape from an atmosphere in which pollen is present, and when this is accomplished no disagreeable symptoms are experienced.

The great advantage of mountainous regions is their barrenness, or at least sparseness of vegetation with little or no pollen, although a small amount of this may be present in the wind, but the higher we ascend the more it diminishes in amount until we reach a point where, if it is not entirely absent, it at least exists in such minute quantities as not to be capable of causing any irritating effects whatever.

If it were possible to prevail upon the patient to carry out a form of treatment for the eradication of this condition and its predisposing factors in an atmosphere free from the irritant influences which cause this disease—pollen—we could safely predict a complete cure in nearly every case. The average individual, however, is most averse to any extra exertion under these conditions, and inclined to depend entirely upon what he expects the climate will do, hence the persistency and prevalence of hay fever.

Many resorts hitherto noted for their freedom from the influences causative of hay fever—presence of pollen of course—as time progresses seem to lose this supposed “virtue;” in fact now hay fever is a possibility in these locations and the sought for relief is not always found there as in the past.

This can be attributed to two reasons. That the individuals who have not found relief from their troubles are the possessors of an exceedingly sensitive nasal mucous membrane, in which the minute quantity of pollen present in the atmosphere is capable of acting as an irritant, or else the condition is not a true hay fever or pollen catarrh but an ordinary paroxysmal coryza, a form of reflex nasal neuroses in which any irritant, as dust, cold, heat, light, sunshine, in fact anything, including pollen, will set up an attack.

The result of civilizing influences and increase of population in these

sections, introducing a vegetation from the lower altitudes into them has been suggested as a reason for these supposed changes of climate, and to this is to be attributed the loss of their beneficial properties in hay fever. While this is of course possible it is most decidedly improbable. In my opinion the climates are the same now as they have ever been and will invariably remain in the possession of their hygienic properties.

But what I consider the most important factors in the supposed loss of the curative properties and hygienic efficiency of many of our health resorts are the habits of the individuals frequenting them. It is due to the continuance of the wearing life of the city, such as late hours, rich diet, lack of exercise, in some even the absence of fresh air through remaining too much indoors; besides the luxuries of the elaborate hotels now so common in

most of these sections. All these did not exist twenty or thirty years ago when they were noted for their hygienic properties. I claim that these are the causes of the seeming deterioration of these locations, if they have really deteriorated as places for acquiring and retaining one's health.

This has been charged against the White Mountain region, so well-known from a period remote beyond the recollection of even those advanced in years, for granting complete immunity from all troubles to the hay fever subject. It is admitted by the most ardent advocates of this region that attacks of this complaint now occur there occasionally and that the freedom from their troubles as in the past cannot be guaranteed to all hay fever patients. This is attributed by many to a change in vegetation following the increase in the population of this section. But when we realize that the change in the

plant life of this location is by no means extensive, consisting of simply a small amount of planting in the vicinity of the towns and some flower gardens around a few of the houses, this theory is hardly feasible and most untenable. If we would take into consideration the fact that a large number of these resorts have become the centres of extreme fashion and gayety, a style of life at no time synonymous with health and hygiene, we can readily understand why hay fever patients do not derive as much physical benefit from a sojourn there as in former times when rest and recuperation were the chief and ultimate object sought for by those going there and pleasure was considered but a secondary consideration.

To the hay fever patient who visits this region we may safely guarantee the same relief as formerly if he will but live in the same manner as did those in the past who derived so much benefit from this climate.

Invariably the White Mountain region should be our first thought as a resort for our patients suffering from hay fever pure and simple. For paroxysmal coryza it may not always be the best climate, however, and in this class the writer places those cases which have not obtained relief there.

An ocean voyage is also to be highly recommended. Regarding this a few cases have been reported in which the attacks have continued even under these circumstances, but here we may doubt the genuineness of the malady. Besides when we stop to think of the number of floral offerings of which so many travellers are the recipients, we would be surprised if the ship were not completely saturated with pollen, and therefore, marvel more at the absence of such trouble than at the few cases which have occurred.

All the benefits of an ocean voyage without its inevitable discomforts may

be obtained by a sojourn on some of the islands off the coast of Maine. A comparatively new region and not yet popular enough to have had all the natural charms of its healthful qualities destroyed. On some of these the hay fever sufferer would do well to seek for freedom and immunity from his or her troubles.

As to the seashore resorts near our large cities, especially in this vicinity, they cannot be recommended for the invalid or health seeker except as the veriest makeshift, and in many cases staying at home would be far preferable in many ways. In such cases where necessity, as lack of means or inability to leave one's business, compels a stay in the city during the summer, a temporary relief from pollen irritation is at least sure, although without doubt the general health must suffer from the lack of change.

Certain of our New York papers have

of late been striving most energetically to inveigle those weak and easily deluded natives of other parts of the country into the belief that this city is a most desirable summer resort. To us who know it well and have experienced its stale air and foul odors at this period of the year and its incessant noise, ever a factor of irritation, together with its unclean and crowded streets, the discomforts of this city in summer are rather a vivid suggestion of what might be that future state which we are informed consists of a lake of brimstone and fire. Truly the attempt to boom up New York as a summer resort is one of the most ludicrous feats of folly within the writer's experience.

But to return to our subject as to the advisability of the patient's staying in the city, if the case were one of paroxysmal coryza; here the ever present local irritant would be at all times in greater amount than in a healthy country re-

sort, even with the most luxuriant vegetation, and such a sojourn would be decidedly contraindicated.

In the selection of a mountainous resort for these patients, I would always suggest a location not surrounded by other habitations, some distance from a town, and with as little surrounding vegetation as possible, either cultivated or wild. As a nearby resort I think this condition is completely fulfilled at Lake Minnewaska, Ulster county, situated in the Shamgump range of mountains at an altitude of nearly two thousand feet above the sea level. True, the writer is aware that occasional cases which seem to be hay fever have occurred here, but, in his opinion they are not cases of pollen catarrh, and largely of an avoidable character, liable to occur anywhere under the same circumstances.

Surely if the hay fever subject cannot in this location obtain immunity or relief from the influences causative of

this disease I know of no better, as it in every way possesses the requirements I have already enumerated as necessary for the ideal hay fever resort.

For those able pecuniarily and with plenty of time at their command, I would suggest the White Mountains, Adirondacks and lake regions of Maine; while for distant resorts the Rocky Mountains and Great Lakes. All these, qualified by the before-mentioned restrictions, are locations that grant beneficial results to the hay fever patient.

Thus is climate of use, as a palliative truly, and curative rarely, but as an adjunct to treatment of most inestimable worth in the cure of hay fever.

SURGICAL TREATMENT.

It is not my purpose here to enter into details regarding the various surgical procedures necessary at times for the treatment of the occasionally existing intranasal irregularities which act as a predisposing factor in the causation of hay fever in certain individuals.

From the enthusiastic reports of some authorities we would be led to believe that the removal of these abnormalities by surgical measures was the grand panacea and cure-all for every case of this complaint, but experience has failed to corroborate this.

In cases where a nose is rendered irritable and therefore susceptible to external influences by the presence of such irregularities as mucous polypi, enlarged turbinals, hypertrophic mucous membrane or hyperæsthetic areas,

conditions most conducive to the development of a coryza from the slightest exposure to any irritating causes especially when occurring in an uric acid subject, other means failing, operative treatment is indicated and will most likely be followed by a disappearance of the hay fever symptoms.

Spurs and septal deviations I do not believe could possibly cause any trouble, unless they came in contact with the turbinals, in which case a condition of irritability would be set up warranting operative measures.

But in many cases the former class of irregularities may be present without causing any inconvenience whatever and in no way acting as irritating factors. This has been repeatedly demonstrated by the failure to obtain beneficial results from their removal, on the supposition that they would be curative measures for this complaint.

Consequently, the surgical treatment

of hay fever has not been as successful a remedial measure as its enthusiastic advocates had hoped. Even the cauterization of sensitive areas, so prevalent a few years ago, has failed to yield the expected results, and is a procedure to be adopted on but rare occasions, and then upon but a limited surface.

In the case of polypi, as they are ever a source of much annoyance on account of their occlusion of the nares, besides being productive of considerable irritation to the parts, their removal is always indicated, preferably by the cold snare.

When enlarged turbinals or hypertrophic tissue are present in an amount to interfere with the respiration, operative measures are surely indicated. By means of scissors or the cold snare if large or cauterization by either chromic or glacial acetic acid if less extensive. As to the electric cautery, this should

be relegated to the past as a means of treatment for this condition; for although relief may for a time be obtained by its use, still a recurrence is invariably the rule, and in a shorter period than after other forms of treatment. All these measures, however, are only rendered effectual by a previous eradication of the systemic constitutional factor producing this condition.

Our only indications, therefore, for surgical measures, consist of either contact of the septum and turbinals, or else an interference with respiration. By operating for other than these we are likely to do more injury than good, in producing conditions fully as, if not more, undesirable.

PALLIATIVE TREATMENT.

Hay fever is but the manifestation of a systemic disturbance, therefore we should strive for an elimination of this deeper lesion rather than for a temporary alleviation of its nasal symptoms. As well might we treat a condition like cancer with anodynes, simply to deaden the pain, while the constitutional process is going on toward destruction. Notwithstanding the fact that palliative treatment for hay fever is very popular and extensively practiced and may be eminently satisfactory to some of our fellow practitioners, it cannot in the long run be so to the patient.

I do not by any means wish to be understood as decrying the use of palliatives in this condition at times when their use is absolutely necessary, but used as a sole means of treatment they

are to be condemned as most unscientific, and but a temporary means of relief, in time losing their power and often leaving the patient in a worse condition than he was before.

The sphere of usefulness for this class of remedies occurs during the paroxysms of hay fever to relieve excessive pain and suffering, when the physician has been called in too late to put the patient under a preliminary course of prophylactic treatment. During these attacks palliatives are often the only means of relief, and under such circumstances indicated and perfectly justifiable.

In cases where no other form of treatment is possible to effect any mitigation of the severity of the symptoms, we have to fall back upon them as a last resort. To depend upon these agents alone, as is the custom with so many practitioners of medicine, is a decidedly slipshod and unscientific method of pro-

cedure, as a cure under such circumstances is not possible, and the same procedure must be repeated during every attack throughout, not only the season, but the patient's whole life, at least as long as he or she is a victim to this complaint. Even in cases where we are obliged to rely on these agents for relief during the attacks, it is always best to put the patient under a form of treatment during the intervals, which very frequently will not be without some good results and if not curative, will at least lessen the severity of the disease.

Various remedies have been recommended and used during the paroxysms of hay fever, either to prevent their recurrence or else to diminish the intensity of the suffering. These are in almost all cases for local use, to be applied to the nasal membrane by means of the brush or spray.

The most frequently used being the following:

Menthol, five per cent. solution in an oily base, is often of great benefit in the less severe forms of hay fever, while sometimes even in the more severe cases it yields good results. It should be freely brushed or sprayed over the membranes of the nose at the slightest admonition of an attack coming on, and used quite frequently throughout its duration. In the intervals a combination containing this in the same proportions may be used.

Cocaine, four per cent. solution until recently has probably been the most frequently used agent for this condition both as a palliative and by some, even pure or in combination, as the sole curative measure for hay fever. As its action is but transitory, this entails the necessity of its repeated use throughout the attack to insure relief, besides the ever present possibility of the patients acquiring the Cocaine habit from the use of this drug. In some

who are susceptible to the influence of Cocaine, disagreeable and even alarming symptoms may occur at times, worse than the disease for which it is used as a means of relief.

It is best, however, except in cases of necessity, and then only when nothing better is available, to dispense entirely with the use of this drug in the treatment of hay fever.

Suprarenal capsule, or its active principle, Adrenalin chloride, a ten per cent. solution, in three parts of water and one part Glycerine, is at the present time the most popular of all the palliatives in use. The discovery of the therapeutic properties of this agent the writer considers one of the most important in medicine in recent years. Not so much on account of its use in hay fever, although here it is of the greatest worth, but in its hæmostatic properties is to be found its great value in the domain of medicine. Its

action is that of a vaso-constrictor upon the blood-vessels and the general circulation in hay fever; these contracting effects drive the blood entirely from the engorged and turgescient tissues of the nose and completely relieve the suffering during the period of its action.

It is without doubt the most effectual and satisfactory palliative we have for this condition, for which reason by some it is claimed to be a cure. As it is a comparatively new remedy its powers may, as has ever been the case in the history of medicine with all new remedies, be overrated and only time and experience will restore it to its proper place as a therapeutic agent.

However, we are willing to give it credit for what it can do and that is very much indeed. One of the great advantages being that its frequent use is not liable to set up a drug habit, as is the case with Cocaine. It also very seldom produces any disagreeable

symptoms, although a few cases have been reported where this has occurred in its intra-nasal use, especially in old neurotic subjects.

The especial indications for its use are the existence of no local abnormalities in the nose, for when such a condition is present its action is not likely to be so beneficial until operative measures have been instituted for the removal of these irregularities.

It has also been found capable of relieving when given internally for hay fever in doses of one or two grains four times a day

Regarding the value of suprarenal capsule in hay fever, it is possible that when its properties are better understood experience will demonstrate the inadvisability of its application, for any long period, to the nasal tissues, on account of the exsanguinating action upon the parts. The function of nutrition is also so impaired as to

cause tissue destruction in various degrees of severity, even resulting in gangrene. These are suggested as possibilities that may arise. Therefore we should ever be exceedingly cautious in the excessive use of it, simply applying it when occasion requires and no oftener. But as a means of relief during the attacks, used in moderation, we need not hesitate to avail ourselves of its benefits for mitigating the suffering and giving the patient rest and comfort.

To relieve the attacks also various inhalations are of use, as: Amyl nitrite, 5 gtts., sprinkled on the handkerchief and held to the nose checks the paroxysms at the beginning of the attacks, but at this time only, as at a later period it may tend to aggravate the condition.

Nitre paper. Strips of blotting paper soaked in a saturated solution of Potassium nitrate and dried. These are

lighted and the fumes inhaled and are often most efficacious in granting relief.

Stramonium leaves may be smoked in a pipe frequently with good results.

Arsenic cigarettes. Take of Sodium arseniate solution, one ounce to one dram of water. Soak paper in this solution so that each piece will contain an amount of salt equalling from one-quarter to one grain. Dry and roll into cigarette form. During the attacks smoke two or three daily. A mouth-piece should be used so that the lips will not come in contact with the paper.

Coffee. A cup of this beverage, made very strong, taken during the attack will often be a means of relief.

Ipecacuanha tincture, in drop doses, is also of therapeutic value.

LOCAL TREATMENT.

This is of use both as preliminary treatment and during the intervals between the attacks. It should consist of a thorough swabbing out of the nares with an alkaline cleansing solution, such as Dobell's or something similar, the exact constituents being immaterial. A very good formula is that recommended by Grunwald, and consists of equal parts of the Bicarbonate, Biborate and Chlorate of Sodium, using a teaspoonful of this to a tumblerful of warm water. The essential part being to swab freely, with cotton on a holder, all over the surface of the nasal mucous membrane, as well as under and between the turbinates, leaving no space untouched. This having been accomplished, dry out well with cotton and apply in the same manner either of the

following, according to the amount of congestion present :

(a)

Menthol,	gr.v.
Eucalyptol,	m.xx.
Petrolatum, ad.,	℥ii.
Sig. Apply.	

(b)

Menthol,	gr.x.
Camphor,	gr.xv.
Eucalyptol,	m.xxx.
Pinus pumillioni,	m.xv.
Petrolatum, ad.,	℥ii.
Sig. Apply.	

The former for mild cases, the latter for the more severe forms.

The above treatment, begun two or three weeks before the expected attack comes on, and carried out by the physician at his office, together with the proper internal medication, as well as a correct hygienic mode of living, will in but a small minority of cases of hay fever fail to, at least, so lessen the severity of the attack as to well recompense the patient for his trouble.

This treatment, however, to be successful must be carried out throughout the course of the disease, during the paroxysms as well as in the intervals between the attacks, when at least their duration will be much diminished and the severity lessened to a great extent.

If the annoying symptoms are still persistent and hang on, as a last resort, a ten per cent. solution of suprarenal capsule may be prescribed.

For home use, an oil atomizer and one of the oily preparations used by us should be given him to spray into the nose during the day and at night before retiring, also at the slightest signs of irritation, in order to keep the membrane protected from the action of the irritating influence—pollen—in the atmosphere.

But in all cases we should strive to have our patients follow out a systemic course of treatment, by which proced-

ure only can the predisposing factors of this disease be eliminated. Even though we may put a stop to the nasal symptoms, the likelihood will be that the systemic condition caused by retained and uneliminated waste products will show itself as some other manifestation, possibly more serious than the one just driven away.

In short, until this deeper lesion is eradicated, the patient cannot be in perfect health.

GENERAL SYSTEMIC TREATMENT.

By this I mean a thorough course of constitutional treatment to eradicate the principal predisposing causative factor in the various forms of reflex nasal neurosis, under which category hay fever is to be included.

In my work on "Uricacidæmia,"* I stated that by means of a course of hygiene and diet alone we might cure our patient, if not too far advanced in this pathological state, without any other means whatsoever. But as it would require considerable time for the accomplishment of this purpose by these factors alone, I would suggest in every case a combination of all these together with eliminative treatment and remedies for the often accompany-

*See note on page 65.

ing symptoms, as well as for the sequelæ of this condition as a means of cure much more effective and requiring considerably less time.

The therapeutic methods of procedure to be adopted here are first, a complete and thorough elimination of the excretory waste products retained in the system, and second, the adoption of hygienic and remedial measures that the accumulation and retention of these same waste products may be prevented. By accomplishing this we strike at the root of the trouble, and when this condition is righted, if not too far advanced, the other symptoms, which are but manifestations of this systemic disturbance, will disappear of their own accord or with but little assistance.

As I have already given directions for the hygienic measures, as also for diet, etc., it but remains to speak of the eliminative methods advisable to assist

in the above steps toward curing our patients.

For this purpose our "regular" brethren have advised doses of two to three drops of nitro-muriatic acid in a half tumbler full of water before meals, to be followed after the meal and at night with Sodium salicylate v-x grains (four times a day), the salicylate acting by virtue of forming a soluble urate in the blood, thus permitting of its ready excretion.

In place of the acid, Calomel in $\frac{1}{4}$ grain doses, can be substituted repeated two or three times at half hour intervals, to be followed almost immediately by the same salicylate treatment, this repeated for several days (four to five). Haig claims this will clear the blood completely of these retained waste products. In place of the salicylate, if it disagree with the patient or in warm weather, when this drug is contraindicated, give Sodium phosphate, in thirty

grain doses; Piperazine, or Sodium or Potassium bicarbonate, the latter preferably, in thirty grain doses, will be all found efficacious for this purpose.

Urtica urens the writer would suggest as, in his opinion, superior to all of these. Recommended by J. Compton Burnett, M. D., as a valuable remedy for this condition. He has not given especial indications but, administered as he directs, it is seldom without good results attending its use.

In acute attacks five drops of the tincture may be given every two to three hours in a wine-glassful of warm water; while in the same chronic conditions give ten drops t. i. d. or morning and night in the same menstruum.

The writer has found this remedy most efficacious in doses of from a half to one drop, given three or four times a day.

Aurum muriaticum 3x, five to ten drops in water, every three hours, on

general principles, for old chronic cases, and for the sequelæ attending these subjects, is of much value, its keynote being depression and melancholy.

Spiritus glandium quercus, v-x gtts. in water t. i. d., another one of Burnett's legacies, is a most excellent remedy for that class of individuals addicted to high living, especially too much alcoholic beverages. It is claimed that this will diminish if not remove the craving for spirituous liquors.

Berberis vulgaris tinct., 5 gtts. t. i. d., is also recommended by various authorities as a good remedy for this condition. To be used on general principles.

SPECIAL REMEDIAL TREATMENT.

For the annoying and disturbing symptoms of this complaint, in fact the whole disease, as apparent to the patient, but which is in reality only the manifestation of a deep-seated condition—uric acid—remedial measures have ever been and are of most inestimable benefit; often preventing the recurrence of these symptoms or lessening their intensity, and even in some cases causing their permanent disappearance. But, in the large majority of cases, these alone without other measures are very like smothering a fire, which will break out in some other place with equal if not greater intensity. Unless the systemic predisposition, the causative factor in this condition, is but a simple functional derangement of the metabolistic process, amenable to the action of the

remedies administered, this same underlying condition, the root of all the evil, is in most cases apt to remain. Although its susceptibility to the toxæmic action is removed from the old site of its manifestations, the symptoms consequently disappearing, still another point in the next order of susceptibility will begin to develop a pathological condition and a new train of symptoms show themselves.

A condition of this kind being of not infrequent occurrence, as the appearance of rheumatism, etc., after patients are cured (?) of this complaint (hay fever).

Under this heading we will simply take into consideration the internal administration of remedies. There have been recommended and used a number quite extensive, and the results from the large majority of them have been utterly worthless. However, as many have been of considerable remedial value, I will give a list, first of the

principal ones employed by the so-called "regular" school, and then the remedies used by our school, with their indications; but, as these are in many instances rather scanty, we must remain somewhat in the dark as to this point and trust mainly to their use on general principles, at least until our *Materia Medica* can give us more information as to their applicability to this disease.

The therapeutic resources of the old school, chiefly recommended by the best authorities in this complaint, are the following:

Zinc phosphide, 1-50 to 1-20 grain, nervous subjects.

Zinc valerianate, 1 gr. t. i. d., also for the nervous symptoms.

Hydrobromate of quinine, 1 gr., for the nasal symptoms.

Iodide of arsenic, 1-20 to 1-8 gr. t. i. d., for the nasal irritation.

Arsenious acid, 1-100 gr. t. i. d., for the asthmatic condition.

Potassium iodide, v-xv grs. t. i. d., also for asthmatic symptoms.

Terpin hydrate, 10 grs. every four hours, two weeks before the attacks and every two hours during their continuance, has been the means of frequent prevention, or considerable mitigation, of the annoyance and distress from this disease.

Nitro muriatic acid, v gtts., in a glass of water, taken night and morning during the attacks and until the symptoms disappear.

Phosphoric acid dilute, x minims in water, also night and morning, in the same manner as the above, has been of use.

Lemon juice, in an appreciable amount, taken in the same way, has been recommended.

Salicylate of soda, v grs. per day for two weeks before the expected period of the attack, has been of service in many cases as a prophylactic.

TREATMENT.

HOMŒOPATHIC THERAPEUTICS.

By means of internal treatment, according to the methods of our school, much has been and may be accomplished, not only in preventing or relieving the manifestations of hay fever, but where the remedy is applicable to the whole condition, many complete cures have been effected by such administration. But, as a rule, the latent predisposition will usually require remedies of a deeper action than the majority of those comprising the following list, besides measures for the purpose of eliminating the root of the constitutional impairment are also required to effect a permanent cure.

It will be noticed that the indications given for many of these remedies bear a close resemblance to each other, in

some cases being practically the same.

It is a pity that marked characteristics exist for but few of them. Besides it is a common occurrence that a drug will relieve or cure this trouble in one season, while for the same patient, under seemingly identical conditions, the next season, it will be of no use whatever. For this reason the treatment of hay fever at present must seem to savor of chance, at least until we really understand the action of our drugs more perfectly than we do at the present time.

However, many have obtained results with the remedies at their disposal of such a satisfactory nature as to claim for them the virtues of specifics.

The armamentarium of the homœopathic school for the treatment of hay fever consists of the following list of remedies :

Allium cepa. 2x. is claimed to be a prophylactic for the early form, or so-called

June cold. Sneezing with watery ex-coriating discharge from the nose, also lachrymation which, however, is bland.

Ambrosia artemesiæfolia θ . Beginning with a dryness in nose, followed by watery discharges. Involvement of the sinuses. Asthmatic attacks.

A most excellent remedy, even used on general principles, for the late form occurring in July and August. As to the efficacy of this remedy, the writer can fully vouch for its value in hay fever, having obtained from its use results at times seemingly little short of miraculous.

Anthoxanthum odoratum θ . This remedy has been used for this disease with some success. The writer regrets being unable to give indications for it. However, as an agent in this condition, it is well to bear it in mind.

Aralia racemosa θ . Sneezing with watery acrid discharge from the nose. Asthmatic symptoms.

Arsenicum album 2x. Ever of value and of use on general principles. Considered by many a prophylactic, and to be given during the intervals between the attacks. Sneezing with irritation in the nose. Thin acrid discharge. Dyspnœa, asthmatic conditions, weak debilitated subjects.

Arsenicum iodatum 2x. This is considered by Hale and many others as a specific for hay fever. Blackley recommends it especially for the asthmatic symptoms. An acrid discharge is its characteristic symptom.

Arsenite of copper 2x. Recommended by Goodno, should be a useful remedy. The copper element exercising a restraining action on the spasmodic condition in asthma. Bronchial asthma, paroxysms of dyspnœa.

Arum triphyllum θ . Sneezing, discharge. Pain over root of nose.

Aurum muriaticum 2x. Useful as a tonic for old worn out and debilitated

subjects. Despondent and melancholy is its keynote.

Chininum arsenicosum 2x. Has been used by many with good results. Indications, however, are lacking.

Euphrasia θ . Sneezing, irritation of nose, watery discharge of a bland nature. In the eyes, however, we have an excessive acrid lachrymation with much photophobia. These are all characteristic indications for the use of this remedy.

Gelsemium θ . Various nasal symptoms, accompanied by a marked physical weakness; occipital headache. In fact, a general systemic involvement would be the indication for its use.

Grindelia θ . Asthmatic symptoms predominate.

Ipecacuanha θ . Especially useful in the asthmatic forms, where its marked characteristic, of accumulations of mucus in the air passages, is present. Wheezing respiration. Coexisting bronchitis.

Kali bichromicum 2x. This in itself is not a remedy for hay fever, but rather for the irritable condition of the air passages often accompanying it, consisting of an exceedingly tough and tenacious mucus, thick and stringy. It will seldom fail to relieve this annoying condition.

This characteristic symptom is of course well known to all of us, but as it has given such gratifying results to the writer in this disease he feels it his duty to call attention to the fact even if the information is not new.

Kali iodide 1x—saturated solution. Incessant sneezing, discharge from the nose, acrid, colorless and watery, besides profuse lachrymation. Involvement of the sinuses, especially the frontal. Asthmatic symptoms. The action of this remedy is in many cases, especially the asthmatic, considered more palliative than curative.

Lonicera caprifolium 0. Very useful

for the intermediate forms occurring between the early and late variety, in late June or early July. The symptoms are not marked or characteristic. It has been used for asthma.

Naphthalin 2x. Coryza and lachrymation excessive and excoriating. Redness and swelling of the eyelids. Asthmatic symptoms, wheezing.

More or less spasmodic conditions present. Aggravation from dust.

Claimed to be a specific as well as a prophylactic for hay fever by some who are most enthusiastic in its praises. While the writer does not consider that a specific has yet been found for hay fever, still he has obtained some brilliant results from the use of this remedy in this disease.

Pathos θ . Excessive attacks of violent sneezing.

This remedy in combination with *Ambrosia* and *Solidago*, of each the tincture in minim doses on tablets, is

considered by Dr. Edward Chapin, of Brooklyn, to be the nearest approach to a specific that has yet been found for hay fever. He has obtained beneficial results in the early and late forms of the disease, and in both varieties, the nasal and asthmatic.

Ranunculus bulbosus θ . Nasal symptoms; smarting in eyes; pressure at the root of nose, with tingling within its cavity. Hoarseness.

Rosa gallica θ . For the early spring form of hay fever. Rose or June cold. Predominance of the nasal symptoms.

Sabadilla θ . Excessive sneezing, marked and constant; discharge watery and profuse; frontal pains. As its action is not deep seated, while it will cut short an attack in many cases, it is not as a rule of permanent benefit. One of its characteristics is aggravation from sunlight. Great irritation of the nasal mucous membranes. Dry cough.

Sanguinaria or *Sanguinaria nitrate* θ .

Frequent sneezing, June attacks, fluent excoriating discharge from the nose. Asthma, dry cough.

Sinapis nigra 2x. Dry form, membrane hot, no discharge.

Solidago odorata θ . Sneezing, coryza, asthma. For those forms occurring later in the season, about the middle of July or after. Hay fever proper.

Succinic acid 3x. Nervous subjects.

Terpin hydrate, 15 minims 3-4 times, but no oftener, a day.

Especially for and during the asthmatic attacks.

Zinc iodide 3x. In nervous subjects.

CLINICAL CASES.

The writer would like to offer the data of a couple of cases in which results, considered decidedly brilliant, followed treatment.

CASE I. J—— F——, 30 years of age; born in England and lived in this country seventeen years; a business man, employed most of the time out of doors and leading an exceedingly active life; had hay fever, asthmatic form, for twelve years; usually made its appearance about the middle of July and lasted for two months.

The symptoms were worse in damp and cold weather, also when indoors; as he expresses it, "when at home Sundays;" accompanied by frequent sneezing, but not much discharge or any smarting in the nose or eyes.

Is awakened nights, after sleeping an

hour or so, by attacks of difficulty in breathing, necessitating sitting up and preventing sleep, the condition lasting until morning; not followed by any expectoration. When first seen the case had been going on about a month.

Prescribed *Naphthalin* 3x.

Saw the patient about a month later; he informed me that two or three days after commencing the medicine he was "all right."

This was several years ago. Have seen him since and he informs me that he has had no recurrence of the trouble.

CASE 2. Another successful experience occurred a few summers ago in Sharon, Conn, in which delightful town the writer has spent many of his summers. The patient was a lady about forty years of age, in fairly good health, although highly lithæmic, with a nasal membrane in a state of rebellion to everything existing in the vegetable world.

For many years subject to attacks of hay fever, the catarrhal form originally, but lately merging into the asthmatic; this condition usually came on around the middle of August. Started off in June of that year with a troublesome rhinitis, about the time the roses commenced to bloom in her back yard in the city. Later in the month she came to Sharon to spend the summer. For a few weeks her condition was somewhat relieved, probably due to the change of air acting on her general health. Gradually, however, the condition returned, and about the middle of July the trouble reached its worst. The most distressing feature was an asthmatic condition, awakening her every night from her sleep at about two o'clock regularly, when the difficulty in breathing would assume such a degree of severity as to necessitate sitting up for an hour or two, then it passed off sufficiently to

allow a certain amount of sleep until morning.

This ran on for several weeks nearly every night, resulting in a general condition of debility and nervousness.

Sleep through the day somewhat compensated for the loss at night, but her general health was suffering from this condition.

Various remedies were tried without any success whatever, *Arsenic*, *Arsen. iod.*, etc., etc. For the tough phlegm, which seemed to cause so much annoyance, *Kali bi.* seemed to give the greatest amount of relief, it removing this symptom temporarily.

About this time an article came out in one of our old school journals, written by a prominent New York specialist, as to a wonderful discovery (?) made by him regarding the curative properties of *Ambrosia artemesiæfolia* or the common rag weed in the treatment of hay fever, a remedy by no means

unknown to us, but simply requiring to be called to our attention, besides being most decidedly homœopathic in every way to this condition. Whereupon I immediately sent down to the city and procured some of the tincture.

This was about the time when the condition was at its worst, the patient having suffered severely for several weeks, troubled nightly and was altogether in a decidedly wretched state, completely broken up by these distressing attacks and, in fact, pretty well worn out.

I prescribed five drops of the tincture of *Ambrosia*, three times a day, with a warm bath at night. To make the matter short, after the first dose, taken at night, together with the bath, she slept through the night without the occurrence of any of the past trouble and not a sign of hay fever or asthma during the remainder of the season.

Surely such results as these tend to convince us that Homœopathy is not the myth, or even as I am informed some of our medical brethren term it, "dead issue," that they would lead our unsophisticated ones to believe.

CONCLUSION.

In concluding these ideas on the subject of hay fever, a complaint of unusual interest to all of us on account of its almost insurmountable difficulties, and ever, either eluding or resisting our efforts in combating its influences, the writer dares to hope that he has sufficiently aroused an interest for the further study and research into the complexities of this disease on the lines he has laid out in this volume.

Remembering that no matter what the principles be or from whom they emanate, they invariably need the labor of many hands to mould them into a shape fitted for future use; besides ever necessitating the lapse of time to pass over all, in order that a proper mellowing and ripening be accomplished. Then can we judge of

their merits and appropriate sphere of usefulness in life.

To the hope that such may be the case with this volume, the writer ever aspires.

INDEX.

Adrenalin chloride,	134
Age,	56
Air,	101
All summer colds not hay fever,	15
Ambrosia artemesiæfolia,	23, 44
Anthoxanthum odor.,	46
Asthma,	33, 84
Attack,	80
Autumnal catarrh,	76
Bathing,	99
Beard,	23
Berberis vulg.,	147
Blackley,	22, 41
Burnett, J. Compton,	146
Catarrhal form of hay fever,	78
Causative factors,	22, 37, 38
Chapin, Dr. E.,	159
Characteristic symptoms,	85
Classes of individuals liable to its influences,	56
Climate,	113
Climatic effects,	51
Clinical cases,	161
Clothing,	102
Coast of Maine,	122
Cocaine,	133

Conclusion,	167
Cough,	32, 82
Daily,	23
Definition of hay fever,	17
Degeneration (seeming) of resorts,	52, 117
Diagnosis of hay fever easy,	15, 85
Diet,	106, 112
Duration of attack,	78
Dust as an exciting factor,	39
Early form of hay fever,	75
Elimination of waste products,	32
English-speaking races, hay fever most prevalent in,	108
Etiology of hay fever,	36
Exciting causes of hay fever,	38, 44, 70
Exercise,	97
Eye symptoms,	81, 91
Forms of hay fever,	75
Geographical influences,	50
Golden rod,	45
Grasses,	46
Hay fever (proper),	75
Hay fever, the term a misnomer,	46, 78
Haig,	66, 145
Heat as an exciting cause,	37
Heredity,	54
History,	21
Holcus odorat,	46
Homœopathic therapeutics,	152

Index.

171

Honey suckle,	45
Hygiene,	97
Hyperæsthesia of nasal membrane,	27, 35, 90
June cold,	75
June rose,	45
Late form of hay fever,	76
Lake Minnewaska as a resort,	124
Light as an exciting factor,	38
Lily of the valley,	45
Local disease,	61
Local treatment,	139
Marsh,	23
Meat eating,	108, 110
Menthol,	133
Metabolism,	27, 72
Mountainous regions,	116, 124
Nasal discharge,	80
Nervous coryza,	28
Neuroses,	59
New York as a summer resort,	123
Nitro-muriatic acid,	145, 151
Occurrence,	74
Ocean voyage,	121
Palliative treatment,	130
Paroxysmal coryza,	28, 31, 41, 72
Pathology,	86
Periodic coryza,	13, 31, 40, 72
Periodicity of hay fever,	78, 85

Periodicity, cause of,	77
Pollen the exciting cause,	18, 37, 40
Pollen theory,	23, 30, 43
Pollen varies according to season,	76
Premonitory symptoms,	80
Predisposing cause of hay fever,	49, 88
 Rag weed,	 23, 44
Rose,	45
Rose cold,	75
Reflex nasal neuroses,	15, 25, 79, 83
Reflex nasal neuroses, causative factors,	26
Reflex nasal neuroses, diagnosis of,	34
Reflex nasal neuroses, differentiation from hay fever,	31
 Sajous,	 23, 89
Salicylic acid,	70
Salicylate treatment,	145, 151
Seashore resorts,	122
Sensitive areas in the nose,	89
Sex as a predisposition,	55
Special remedial treatment,	148
Surgical measures as a cure,	61
Surgical treatment,	126
Suprarenal capsule,	134
Symptoms,	74, 90
Synonyms,	19
Systemic treatment,	143
 Tea drinking,	 108
Treatment,	92

Index.

173

Uricacidæmia,	65
Uric acid condition,	61, 64, 87, 97, 148
Urtica urens,	146
Vegetable irritants,	44
Vegetables,	111
Water drinking,	110
White Mountains as a resort,	119, 121, 125

Filed by Preservation 1991

Digitized by Google

